The Ingleby Lecture
ON
SPINAL ANAESTHESIA BY TROPACOCAINE;

WITH A REVIEW OF 1,295 CASES.

DELIVERED AT THE UNIVERSITY OF BIRMINGHAM.

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IN the first place I offer my acknowledgements to the Council of the University for assigning to me the honourable duty of delivering this lecture. The roll of the Ingleby Trust includes the names of many distinguished men with whom it is a privilege to be associated. At the same time, I do not forget that the worth of their lectures as a permanent asset to medical literature increases the responsibility resting upon their successors.

And next a tribute is due to the memory of John Tomlinson Ingleby. By his talents and character he gained distinction among his contemporaries as an obstetric physician and teacher. The lectureship was founded in 1876—thirty-one years after his death—to promote the diffusion of medical knowledge, and to link with this purpose the name of a bygone worthy who did much in his generation to build up the reputation of the Birmingham Medical School.

Since Ingleby's day the field of medicine has broadened in all directions in correspondence with the introduction of modern tools and methods from the loom of scientific progress. In particular, the quest for better means of annulling pain during surgical operations has been keen and incessant, with the outcome that there is now at the service of surgery a wide latitude both in regard to drugs and their mode of application. A generation ago an operator had to choose between the suspension of consciousness by narcotics and the numbing of skin by means of ice and salt or ether spray. The arrival of local anaesthetics, together with the experimental study of their properties, marks a new period, and must be reckoned one of the notable medical events in the first decade of the twentieth century.

From the standpoint of minimal disturbance of the nervous system it is an immense gain if surgical procedures can be carried through without functional impairment of the highest centres, and with no derangement, or at most a transient one, of the normal physiology of the medullary centres. On theoretical grounds, therefore, given various methods of inducing surgical anaesthesia, including one which acts selectively on peripheral nerves while exempting the functions of the brain from harmful interference, that method is to be preferred; and it is now a daily commonplace of the operation theatre that the achievement of this result, notwithstanding surgical manipulations of the greatest severity, is practicable by means of a single needle puncture and the injection of a few drops of fluid into the spinal sac.

A procedure of such extraordinary simplicity and efficacy deserves more attentive study and wider adoption than it has yet received in this country, and if this does not appear from what I proceed to say on various aspects of the subject, I shall do less than justice to a convincing array of facts and considerations.

HISTORY.

For the introduction of spinal anaesthesia surgery owes a debt to the chemists and experimental pharmacologists who investigated the properties of the coca plant. *Erythroxylon* (that is red-wood) *coca* is indigenous in South America, where for centuries the leaf has had a vogue with the natives because of its supposed power to ward off the onset of fatigue during prolonged exertion. The alkaloid cocaine was described under that name in 1859 by Niemann, whose report mentioned the numb sensation produced by the drug on the tongue. Several years earlier the alkaloid had been isolated by Gadecke, the actual but now almost forgotten discoverer, and by him named "erythroxyline." Scant attention was paid to the subject until, in 1879, von Anrep carried out a research on the sensory effects of cocaine on the skin. His observations led him to suggest the use of the drug as a local therapeutic agent in man, and although the suggestion was not at once followed up, his experimental work became fairly well known.

The year 1884 is of special note because it dates the famous discovery of the action of cocaine on mucous membranes. The credit of this advance belongs to Köller, at that time a medical student in Vienna. Having tested the action of cocaine on his tongue, Köller reasoned that a similar anaesthesia, innocuous to the tissues, would be likely to result from the application of the drug to the conjunctiva. He put his ingenious idea to the proof, published his findings, and inaugurated a revolution in ophthalmic surgery. Not content with this conquest he proceeded to deal with the laryngeal and other mucous membranes on the same lines. (One may recall in passing another important discovery made by a medical student, namely, the vaso-dilator action of amyl nitrite, which was described by Lauder Brunton when he was an undergraduate in Edinburgh.) From 1884 cocaine ceased to be a mere therapeutic curiosity; it became an invaluable agent pressed into the world-wide service of medicine.

The logical extension of the use of the alkaloid as a local anaesthetic soon followed, American surgeons leading the way. Halsted seems to have been the first to inject a solution along the course of sensory nerves; he operated on a case of talipes by this means in 1884. W. O. Moore described in the *New York Medical Journal* of January, 1885, the effects of auto-injection into his arm. Within a period of eight hours he injected at intervals no less than 3½ grains of cocaine, and on regaining consciousness he says, "I might have exclaimed with Cowper, 'I awoke, like a toad out of Acheron, covered with the ooze and slime of melancholy.'" Which is a less cause of wonder than his survival to tell the tale. He concludes that amputation would be feasible by injecting over the site of the nerves supplying an extremity.

The pioneer of spinal cocainization was Leonard Corning of New York. He conceived the idea of acting on the cord by injecting directly on to the dural sheath, and published an article in October, 1885, on spinal anaesthesia and local medication of the cord by "a procedure in therapy which possesses the merit of novelty." Following up an instructive experiment on a dog, he operated on a neurasthenic patient, his purpose being to annul sensory conduction in the cord. Through the eleventh dorsal space he injected 30 minims of a 3 per cent. solution of cocaine hydrochlorate. As there was no tingling in six minutes (no doubt because the injection was not deep enough), the dose was repeated. This produced impaired sensation in the lumbar regions, lower limbs, penis, and scrotum; motor power remaining unaffected. The passage of a sound was scarcely perceived, whereas it previously caused much pain. Corning adds, "When the patient left my office an hour or more after the injections, sensibility was still impaired to a marked degree, and the patellar tendon reflexes were abolished." Headache and vertigo were complained of the next day. He suggests that such local medication might be useful in strychnine poisoning, tetanus, and hydrophobia; and concludes with the cautious remark, "Whether the method will ever find an application as a substitute for etherization in genito-urinary surgery, further experience alone can show."

Corning thus laid the foundation of the modern procedure. Holding the view that a drug inserted locally acted on the nerves of the part only by way of the blood vessels, he was content to place his solution in contact with the venous plexuses, and it would appear that in the case cited he did not puncture the cerebro-spinal sac. His example was not widely copied, perhaps because cocaine was soon found to be too dangerous a drug for indiscriminate use, or in doses exceeding half a grain. Meanwhile, as surgeons became familiar with lumbar puncture (introduced by Quincke in 1891), further possibilities were indicated, and in 1898 Bier introduced the present method of injection into the subarachnoid space. From observations on lower animals he proceeded to note the effects on man, and his assistant, Hildebrand, and

himself submitted themselves and six patients to the operation. Cocaine was the drug used, and complete analgesia of the lower half of the body was readily induced in every case, while in one patient the effect reached to the scalp. The by-effects, however, were most unpleasant, in the form of vomiting, giddiness, and severe headache. Hildebrand suffered from these symptoms, although just after the injection he was able to dine well and smoke several cigars. Bier thought the troubles were due to escape of cerebro-spinal fluid, and that rest in bed would prevent them; but experience failed to confirm his opinion. On the strength of his observations Bier was convinced that cocaine was too forbidding an agent, and, pending the discovery of a less toxic substance, he dropped the procedure. Bier's work cannot be too highly praised.

Tuffier of Paris continued using cocaine, and in 1900 he reported to the Academy of Medicine a series of over eighty cases in which he had injected cocaine through the third or fourth lumbar space and induced anaesthesia as high as the umbilicus. So satisfied was he with the results that he announced his intention to aim at a higher level of anaesthesia with a view to operations on the liver, stomach, and thorax.

Robert Jones was the first British surgeon to publish his results. In 1904 he read a paper at Liverpool on spinal cocainization, relating cases and advocating the method for suitable operations.

The discovery of stovaine by Fourneau, and the exposition of its properties by Pouchet in 1904, attracted wide attention and gave a fresh impetus to the subject. Prior to this, in 1891, Giesel had isolated the new alkaloid tropacocaine, naming it benzoyl-pseudotropeine. In 1892 it was tested physiologically by Chadbourne, who named it tropacocaine and reported that it was less than half as toxic as cocaine, and much weaker in its action on motor functions. Led by the advocacy of Schwartz several German surgeons tested the drug, with favourable results. This alkaloid has been much used in Germany, but in France and Britain stovaine has been more in evidence, and its use has been strongly advocated by Barker, McGavin, Gray, and others who have given it extensive trial. Novocain was discovered by Einhorn in 1904; it has been employed with great success by Canny Ryall. The present lecture is a further contribution to the possibilities of tropacocaine based on several years' experience.

Barker has done more than any other surgeon in this country to bring spinal anaesthesia to the notice of the profession and advance our knowledge of the subject. He uses a compound solution composed of stovaine 5 parts, glucose 5 parts, and distilled water 90 parts, all by weight. Having a specific gravity of 1023 as against that of cerebro-spinal fluid which is 1007, it sinks on injection to a level which can be regulated by adjustment of the patient's spine.

Gray has written valuable and suggestive papers. He substitutes dextrin for glucose, and claims that it is superior in respect of its indiffusibility.

Babcock of Philadelphia recommends a solution made lighter than cerebro-spinal fluid by the addition of alcohol.

Pharmacology.

As cocaine was the first substance introduced for spinal anaesthesia it remains the standard by which recent drugs are compared as to their toxic and anaesthetic properties. The list of substitutes includes tropacocaine, stovaine, novocain, and alypin. Of these, tropacocaine, like cocaine, is a vegetable alkaloid, all the others being synthetic compounds, and tropacocaine can also be built up artificially. The radicle benzoyl is common to them all except stovaine, which is a benzoate. Both the alkaloids are contained in coca leaves; but it is remarkable that the plant grown in Java, where it is not indigenous, yields a larger percentage of tropacocaine than the Peruvian plant, which fact explains why the commercial alkaloid is obtained from the Javanese leaf.

Each of the five substances named is freely soluble in water, and the solution can be sterilized at 115° C., except that of cocaine which decomposes on boiling. Stovaine will not stand sterilization by exposure to a high temperature as well as its allies, but its antiseptic nature compensates for this drawback. They are all protoplasmic poisons. Le Brocq estimates their relative toxicity as follows:

Taking cocaine as represented by 1—then alypin is 1.25, stovaine 0.625, tropacocaine 0.5, and novocain 0.49.

Injected into the tissues they have a selective action on nerve fibres, especially centripetal conductors, whereby the function of these is suspended, and a temporary block interposed between the centre and the periphery. In this respect the power of cocaine is surpassed by stovaine, and equalled by each of the other drugs. The bias of selection goes beyond a preference for inhibiting nerves rather than other structures, and sensory rather than motor fibres. It is much more discriminating, inasmuch as it does not stop all the composite functions of an afferent nerve simultaneously or to the same degree; so that the epicritic, protopathic, and deep sensibilities are variously affected. Taking tropacocaine as a type, we find that it subdues the perception of pain before stopping the sensations of touch, temperature, pressure, and position. Hence some clinicians prefer to describe the result as a condition of analgesia: this description is too restricted, and it is unnecessary to drop the term "spinal anaesthesia" originally proposed by Corning. When the action is complete the patient is not conscious of having any part of the body below the ribs.

For clinical purposes the list of agents has been narrowed down to three—stovaine, tropacocaine, and novocain. The aqueous solution of stovaine gives an acid reaction, and is easily rendered inert by a trace of alkali; some of the reported failures of stovaine to produce anaesthesia have been accounted for by the fact that the solution was stored in ampoules of glass containing soluble soda. In a 5 per cent. solution it has a haemolytic action, causing the red corpuscles to swell and break up. Tropacocaine gives a neutral solution in water, and is less irritating to the tissues than stovaine; it is also said to have less inhibitory power over motor nerves. Novocain is a very similar substance; its anodyne effect seems to be more fleeting, but against this can be offset its virtue as a non-irritant to the tissues in the strength ordinarily employed. This property gives novocain pre-eminence as a local anaesthetic.

Technique.

The spinal anaesthetist should think surgically and wear gloves. He is doing a piece of work that is simple enough, but demanding strict cleanliness of skin and apparatus, and my practice is to make the puncture myself. For the patient's back a coat of iodine solution is sufficient.

The instruments should be reserved strictly for the sole purpose of spinal anaesthesia. I use a Record syringe, which is easily sterilized, and steel needles made to my design by Down Brothers. The point is short and sharp, and the stem opens funnelwise into the base, so that the steel wire stylet can be promptly slipped into the canal. Everyone knows the difficulty of inserting a wire into a shouldered hollow needle except from the pointed end. Delay caused by boggling attempts to clear the eye of the needle when *in situ* should be specially avoided in the case of nervous patients. The needles vary in length from 6.5 cm. to 8 cm., and in diameter from 16 to 18 standard wire gauge. A needle must be discarded if it becomes brittle from repeated rusting, or it may break when being inserted, an accident which has happened in my hands; the piece was promptly extracted, and no ill result followed.

Tropacocaine in the form of a solution of the natural alkaloid can be obtained from the manufacturing chemist in glass ampoules. My earliest supplies came from a German firm, but the quantity did not always accord with the label, nor was the strength of the solution apparently uniform. Latterly I have been supplied with a reliable preparation by Allen and Hanburys. Each ampoule contains 1.5 c.cm. (say 25 minims) of a 5 per cent. neutral solution in normal saline, having a specific gravity of 1.016, and freezing at −1.13° C.

The dose is graded according to the patient's weight, allowance being also made for the modifying factors of age, state of health, and the desired level of anaesthesia. A dose of 1 grain of tropacocaine—that is, 20 minims of the 5 per cent. solution—is suitable for a healthy person weighing about 11 st. The maximum single dose I have given is 24 minims. For a child 1 year old 4 minims

would be enough. Debility and old age are indications for decreasing the quantity injected, and in such conditions I never leave more than 1 c.cm. in the syringe—that is, 17 minims—and since 2 minims remain in the needle, 15 minims is the maximum quantity injected, representing ¼ grain, or about 5 cg. After the lapse of forty or fifty minutes, if sensation is returning before the operation is finished, I give a second injection of 8 to 12 minims; alternatively—and as a rule this is the more convenient course when a very few minutes are needed—the last stage of the operation is done with the aid of a general anaesthetic, and it is impressive to see what a surprisingly small amount will suffice, deep narcosis being quite unnecessary.

The patient may be seated or lie on either side, but in the sitting position the puncture is more conveniently made and the needle less likely to stray from the right path. When well enough he sits on the side of the table with his feet on a chair, and leans well forward to round the back and separate the spinous processes; and with elbows on thighs he rests his head on his hands. In cases of serious abdominal disease or of great debility the lateral posture is always necessary, and must also be adopted if a second, and smaller, injection has to be given before the operation is finished. The back is curled into an arch by approximating the chin to the knees, and whenever this is impossible, owing to abdominal distension or other cause, any twist of the spine should be carefully noted and allowed for on insertion of the needle. By attention to this detail a puncture can always be made unless there is unusual deformity.

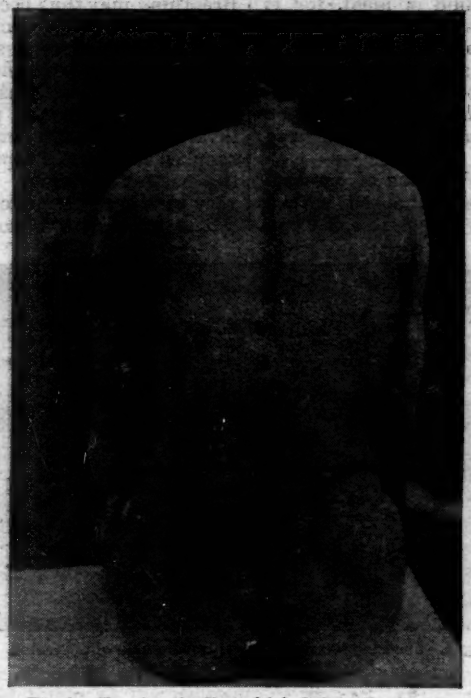

Fig. 1.—Showing the line which defines the fourth lumbar spine.

With regard to the site of puncture, the place of election is the second lumbar interspinous space. Here the needle enters below the spinal cord between the divisions of the cauda equina, and the interval between the spines is well marked; but the third space is almost equally accessible, and I often choose it. A valuable guide in counting the lumbar spaces is a line drawn across the back from the highest point of one iliac crest to the other; this line touches the fourth lumbar spinous process. A successful injection at the site mentioned produces anaesthesia of the lower limbs and trunk as high as the umbilicus, and by raising the pelvis on a sandbag sensation is lost up to the nipple line. For operations on the upper abdomen and kidney I inject through the tenth or eleventh dorsal interspace for choice, and although I have on several occasions gone as high as the ninth, I have come to the conclusion that the tenth dorsal space marks the highest limit beyond which it is not prudent to apply the procedure.

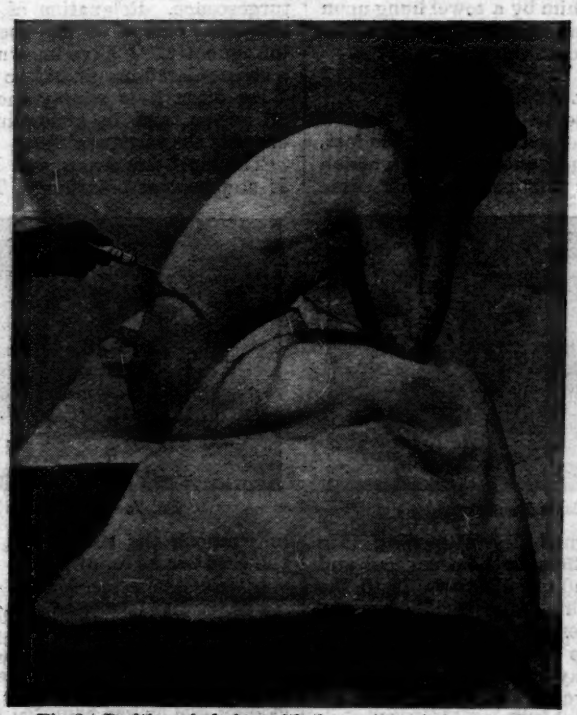

Fig. 2.—Position of choice, with the patient sitting up. The injection is being made in the middle line through the second lumbar interspinous space.

The needle, armed with stylet, is inserted in the middle line, just above the lower spine of the selected space, and is pushed steadily in the sagittal plane to a depth varying in adults from 4 cm. to 8 cm. From infancy to adolescence the distance of the dura from the skin varies between 1 cm. and 4 cm. In the lumbar region the track of the needle is almost perpendicular to the surface, with a slight inclination upwards, the angle between the needle and the skin being about 80°. In the dorsal region the upward deviation increases conformably to the overlapping of the spinous processes. If the point of the needle encounters bone in its path to the theca it must be partially withdrawn and then pushed home in a slightly altered direction. In rare instances it may be necessary to explore another space before entry is effected; most exceptionally the attempt may have to be abandoned, owing to crookedness of the column, unusual bony formation (as in osteo-arthritis), or extreme fatness of the patient preventing definition of the spines. Beneath the skin some resistance will be felt when piercing the supraspinous and interspinous ligaments, and to a less degree at the dura mater; the former may be so hard as to render a lateral puncture preferable, but the needle is then more likely to prick a nerve within the theca. The act of piercing the dura mater is perceived by the sudden loss of resistance.

Assuming a satisfactory puncture into the subarachnoid space, on withdrawing the stylet cerebro-spinal fluid at once flows out in drops or in a jet which intermits with the respiratory movements. Above the first lumbar space the stylet must be withdrawn as soon as the ligaments are pierced, and the needle then pushed cautiously through the dura mater. A scanty tapping may be due to one of several causes:

1. Low tension of the sac.
2. Occlusion of the eye of the needle by a fragment of tissue picked up *en route* or by a nerve within the sac.
3. Incomplete puncture of the theca, so that the eye is not entirely within the sac.
4. Perforation of the space, so that the needle's point is up against the posterior common ligament and the eye partly outside the sac.

One or other of the following means will generally succeed in increasing the flow: Making the patient cough, rotating the needle, inserting the stylet to clear the eye, varying the depth of puncture, aspirating with a syringe. In this connexion the observations of Lusk are pertinent. In several dissections he found the arachnoid and cord adherent posteriorly, so that the subarachnoid sac could only be reached by perforating the cord. Below the cord similar adhesions were found in some cases between the arachnoid and nerve bundles of the cauda equina.

Abnormalities of the sac undoubtedly occur and may prevent easy access to the cerebro-spinal fluid. If only blood escapes, the needle should be withdrawn and another space punctured.

A free outflow of cerebro-spinal fluid is ideal, for it proves that the needle is so placed as to ensure delivery of the full dose of anaesthetic into the subarachnoid space. Injection of a portion of the solution outside the theca explains most cases of imperfect anaesthesia, and must be guarded against by correct insertion of the needle and avoidance of displacement when connecting the syringe.

I collect and throw away 1 to 2 drachms of cerebro-spinal fluid, and attaching the syringe charged with a suitable dose from an ampoule, I draw, if possible, 2 c.cm. into the barrel to warm the dose; the mixture is then slowly injected. Stoppage of the flow when aspirating implies that a nerve filament has been drawn into the eye of the needle, and without further ado the injection is made, although little or no fluid has run into the syringe. As a rule it is not advisable to inject unless there has been a free escape of cerebro-spinal fluid; but the rule is not absolute, and exceptionally I have found it better to wait and see the result of injection before making a second puncture. Care must be taken not to disconnect the syringe before removing the needle. On removal of the needle the spot is sealed with collodion.

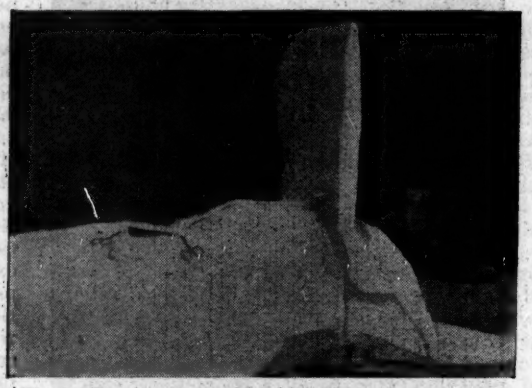

Fig. 3.—Showing screen which hides the field of operation from the patient.

My object in abstracting fluid is to delay absorption by reducing the tension of the sac. Perhaps, too, hypertension due to irritation of the sac is not so likely to occur, and thereby the tendency to headache is diminished.

The patient, lying recumbent and with his hands resting on his head, is next brought into the theatre; and the field of operation is hidden from him by a towel hung upon a wire frame stretched above his chest. Over this the surgeon can glance at will to observe the patient's face.

Phenomena of Spinal Anaesthesia.

The earliest effects are subjective. In less than a minute there is a feeling of increased warmth in the feet, quickly followed by tingling merging into numbness, which flows wavelike to the thighs in the next two or three minutes. Impaired tactile sensibility deepening into anaesthesia comes on rapidly, first in the coccygeal and anal regions, then in the feet, and travels upwards to the trunk. A common remark at this stage is "My legs are sleepy." The upper limit varies with site of injection, dose of anaesthetic, and posture of spine; it frequently reaches the nipple line, and may extend to the clavicles and upper limbs. Above the level of lost sensation there is a zone of blunted feeling several inches wide.

Objectively the knee-jerks soon disappear, and, a little later, the plantar and cremasteric reflexes. With the onset of motor paresis the patient notices that the lower limbs feel heavy, and until reassured he may be uneasy on finding that he cannot lift his feet from the table. Loss of motor power follows the lead of anaesthesia, but is never so high or complete. In particular the abdominal muscles become quite flaccid, and in acute peritoneal conditions the contrast to the previous board-like hardness is remarkable. In high anaesthesia the intercostal muscles are put out of function from below up to a variable level. Breathing may thus become almost entirely diaphragmatic in association with diminished rate and depth of respiration. This produces a sense of pressure on the chest, and another symptom which may be termed the "xiphoid tug," that is, a dragging sensation referred to the end of the sternum. Intercostal paresis is, however, by no means invariably present, even with anaesthesia above the nipples, as I have repeatedly demonstrated by directing the patient to cough. Yawning as a sign of air-hunger is very rare in my experience of tropacocaine.

The pulse-rate is not uniformly affected; as a rule it is first accelerated and slows down later on; exceptionally it may show no alteration. Some degree of syncope is common, and is accompanied by pallor of the face and sweating of the brow. One patient, a healthy young man operated on for radical cure of hernia, fainted on the table. An incident of such extreme rarity is matched by the case of another man who fainted in the anteroom before any preparation was made for injecting him; the cause here was clearly emotional. These conditions are not serious, and are combated by a whiff of smelling salts, or a tablespoonful of whisky, or ether and strychnine *sub cute*. Bathing the face with cold water is also refreshing.

Vomiting is another incident of faintness. It is uncommon, and never violent nor continuous. By raising the blood pressure it does more good than harm, and as it is soon over it scarcely delays the operation. Priapism is comparatively common to the extent of moderate turgescence. Relaxation of the anal sphincter and unconscious escape of the rectal contents occur not very infrequently. I have known this happen after relief of a strangulated hernia before the patient left the theatre. Very often it is simply the return of the residue of an enema, and in abdominal operations the advantage exceeds the inconvenience.

The most dangerous, and happily the rarest, symptom is stoppage of breathing. This occurred in one instance only among the series of 1,295 reviewed. The facts of the case are as follows:

Fig. 4.—Injection in the lateral position.

Fig. 5.—Showing pelvis raised on a sandbag.

Stoppage of Breathing.

H. R., aged 69, seen in consultation with Dr. Alfred Stanley of Leamington. He was suffering from jaundice due, in my opinion, to cancer blocking the common duct. As the patient thought his disease might be gall stones, he requested me to explore, and he was admitted to the Queen's Hospital for this purpose. I decided to operate under spinal anaesthesia, and injected 1 c.cm. of a 5 per cent. solution of tropacocaine into the tenth dorsal space, the patient being in the sitting posture. Within three minutes, and while lying on his back talking quietly to me, his speech and breathing suddenly failed. Ether and strychnine were at once injected, and artificial respiration begun by a combination of the Sylvester and Laborde methods. Each pull on the tongue evoked contractions of the sterno-hyoid and sterno-thyroid muscles, but there was no perceptible

response by the diaphragm. After three minutes (the time is, of course, estimated, as attention was concentrated on recovery), as I was not satisfied with the entry of air, I opened the trachea. At that time faint heart beats could be detected, but there was no pulse at the wrist. Artificial respiration was maintained for about five minutes longer before natural breathing returned, and the pulse reappeared at the wrist. His condition became so good that it was possible to open the abdomen and ascertain the presence of a hard growth in the head of the pancreas. The abdominal and tracheal wounds healed by first intention, and the patient left the hospital ten days later apparently none the worse for his alarming experience. I heard subsequently that the disease had pursued its gradual course to the inevitable end.

In another case of jaundice the depth of respiratory depression made it advisable to give artificial help. The notes are as follows:

Jaundice: Respiratory Depression.

A woman, aged 73, sent to me by Dr. Ainscow of Warley. Suffering from gall stones, diabetes, bronchitis, an intermittent heart, and rigid arteries, she was a bad subject for any operation or anaesthetic. Two hours before operation a small dose of scopomorphine was given subcutaneously. The anaesthesia induced by 1 c.cm. of tropacocaine solution in the tenth dorsal space was very satisfactory, and all went well until the gall bladder was being emptied of its eighty-six stones, when the breathing became very shallow. After rhythmic pressure on the chest for a minute or two natural breathing became deeper and no further aid was required. Three stones were removed from the common duct, which was drained, and the gall bladder excised. She was very cheerful and pleased with herself when she called to see me a few weeks ago, though troubled with bronchitis and shortness of breath. I do not think I have tested the value of spinal anaesthesia more severely than in this case.

The anaesthesia lasts from thirty to ninety minutes, the average duration being about sixty minutes, and it ebbs through a stage of gradual recession. The variations depend mainly on the dose relatively to the particular patient—that is to say, the same dose will have a more prolonged effect on a light or asthenic patient than on one who is heavier and more vigorous. I am strongly opposed to giving a dose calculated to act far beyond the requirements of the operation, for if the anaesthesia recedes too soon a second injection of a half-dose can be given, or recourse may be had to general anaesthesia. The receding stage of blunted sensation is quite adequate for much operative work when reinforced by the twilight sleep of scopomorphine.

It is of interest to note the behaviour of patients on the table. Even to the most phlegmatic the prospect of an operation is not alluring, while to the highly-strung it may bring acute apprehension. Fear adds considerably to the risk of general anaesthesia and is not allayed by strange odours and bewildering sensations. Not seldom there is physical pain to boot. Now in both these relations, the psychic and the physical, spinal anaesthesia offers a genuine advantage. Forewarned of the needle and its effects, the patient regards the momentary prick as a trivial matter, and with the rapid onset of anaesthesia anxiety is replaced by an emotion of pleased surprise which is the best possible calmative. While the house-surgeon is taking notes, the ward sister stands by to give attention and to divert the patient with quiet conversation. Most patients prefer this course; those who have had scopomorphine go to sleep; others do the same without the aid of drugs; children are amused with a toy; now and then a cup of tea or a cigarette is asked for and given; and on occasion a patient indulges in singing or whistling. A question sometimes asked after an operation is finished is, "When am I going to have my operation?" and the patient is incredulous on being told that the diseased appendix or painful piles have been removed.

In no class of case is the benign effect more obvious and gratifying than in acute abdominal conditions such as fulminating appendicitis or perforated ulcer. Within five minutes of the injection the agonizing pain is subdued, the face loses its expression of suffering, and the erstwhile rigid muscles, now toneless, permit deep palpation which is unperceived by the patient.

In fine, the general attitude is one of placid self-possession and complete mental detachment from the surgical proceedings in progress. Those who have not witnessed the procedure will find a new sensation in the strange, I had almost said uncanny, experience of hearing a patient quietly chatting with the nurse while his viscera are being short-circuited or his gall bladder emptied.

By-effects.

In a large majority of the cases by-effects are conspicuously absent, and with the return of sensation the normal physiological state is resumed, apart from any disability incidental to surgical operation. The patient, having suffered no mental clouding, returns to his books and conversation, or goes to sleep. Food may be given with discretion, and this is a boon to old and weakly people; but, in view of possible vomiting, the first meal should be small and simple.

The ward scenes after spinal anaesthesia are in marked contrast to what is commonly presented after ether and chloroform. The absence of noisy crying, restlessness, and bouts of vomiting, does away with the need of special attention, and is appreciated both by the nurses and other patients.

The most objectionable by-effect is headache, and it is also the most capricious and puzzling. In 5 per cent. of the cases it is severe, persisting for several days; and in another 10 per cent. it is more or less present. Why so many should go scot free I cannot say, nor can I explain cases of which the following is a type. A woman aged 32, sent to me by Dr. Worsley of Coventry; after spinal injection for colotomy she had two sad days of headache, whereas on two subsequent occasions when she had similar doses of tropacocaine for operation on a recto-vaginal fistula and removal of sutures there was no discomfort. With regard to adults, apart from the fact that persons prone to headache on slight cause furnish the largest group, I know no ascertained relation to age, sex, disease, site of puncture, or posture of the patient. Since the symptom is met with after puncture without injection, a slight lesion is obviously an exciting cause, and altered tension of the sac is a not unreasonable conjecture. As a disagreeable sequel of anaesthetics it is not peculiar to spinal injection, and its importance need not be unduly magnified. Nor is it necessary to put suggestive questions to patients with a view to eliciting a complaint of headache. The common type is occipital, and it is aggravated by movement of the head. Aspirin in 10-grain doses is a good remedy, but not a specific.

Vomiting occurred in 7 per cent. of the cases—a proportion which can be reduced by deducting gastric and gall stone cases. As a rule it is a trivial symptom quite unlike what is frequently noticed after general anaesthesia. Indeed the comparative immunity from post-operative vomiting is a strong recommendation of the procedure; the patient is not sick or sorry; he is spared the strain of movements which would cause pain and delay repair; he has less need of anodynes; and nutrition being unhindered, he has a comfortable sense of well-being.

A less frequent trouble is backache, which may be complained of as a dull feeling along the spine, never serious, and gone in a day or two. Tolerance of this symptom, as of headache, varies with a patient's neurotic tendency and sensitiveness to pain in general.

Notes were made on the urine of 20 patients, taken at random, who were free from albuminuria before operation. After injection, albumen was found in the urine of 5 of these as follows: Two showed a faint haze in the first specimen only; 2 showed a faint haze in the first specimen and in each subsequent specimen for thirty-two and thirty-five hours respectively; 1 showed a faint haze in the third and fourth specimens passed at the fifteenth and twentieth hours respectively. So far as they go, these few observations indicate that tropacocaine is not an intense protoplasmic poison, and that in this respect it compares favourably with other anaesthetics.

A slight rise of temperature is exceedingly common after any major operation. I find no proof that tropacocaine augments this tendency. In a series of 20 cases, 11 showed a rise of temperature ranging from half a degree to two degrees, in 6 there was a fall of a fraction of a degree, and in 3 the temperature remained normal.

Retention of urine needing a catheter is uncommon, and in the few cases coming under my notice the cause was largely psychic.

No case of the 1,295 reviewed has come to my knowledge in which any lasting ill effect has followed the injection. Some observers have reported the occurrence of ocular and other paralyses persisting for weeks and in the case of the sixth cranial nerve for months. Such untoward results are very infrequent after spinal anaesthesia

with any drug, and are not unknown after simple lumbar puncture; but to whatever extent they may be attributable to other agents, I have not encountered a single instance of them as a sequel of injection with tropacocaine.

Lastly, the spinal method is exempt from several grave concomitants of ether and chloroform—namely, pneumonia, bronchitis, and acid intoxication.

Biological and Physical Data.

An inquiry into what happens within and beyond the cerebro-spinal sac when an anaesthetic is injected opens up a number of questions that are more easily asked than answered. Problems yet unsolved have elicited ingenious guesses, which in their turn have given rise to profitable debate and research; but further investigation is demanded if the gaps in our knowledge are to be bridged.

The average volume of cerebro-spinal fluid in an adult is estimated at about 70 c.cm., that is, 2½ fluid ounces nearly. It is derived from the blood plasma through the agency of the choroid plexus, but whether by dialysis or secretion physiologists are not agreed. The cells of the basement membrane look like those of secretory organs, and the fluid itself closely resembles the secretion of the lacrymal glands. Specimens examined by me immediately after collection were neutral to the phenolphthalein test, but became alkaline on short exposure to the air, probably owing to oxidation of proteins. This observation conflicts with Tuffier's statement that the cerebro-spinal fluid is distinctly alkaline. The specific gravity of my specimens averaged 1.007.

When an alien fluid is injected into the spinal canal it is distributed by three forces—propulsion, gravitation, and diffusion. Bier suggests another factor—namely, displacement of the column of fluid by change of posture. This seems very dubious, and is only mentioned because of the respect due to so great an authority on spinal anaesthesia.

Forcible injection would propel currents of the solution in various directions, and is to be deprecated. With gentle injection propulsion is negligible.

Gravitation can be taken advantage of within limits to localize the solution in a chosen part of the canal. Since the specific gravity of tropacocaine solution is 1.016, it begins to sink through the lighter cerebro-spinal fluid to a level determined by posture—upright, lateral, or dorsal; and its action is most evident on the nerve filaments over which the concentrated solution flows, and with which it remains longest in contact by temporary stasis.

Diffusion is of the utmost importance, for it results in uniform blending of the fluids throughout the subarachnoid space, and the drug, in an attenuated form, is thus brought into close relation with that part of the nervous system which lies beneath the cranial wall of the sac. So rapid is the movement that Rehn found methylene blue in the lateral ventricle of a horse ten minutes after injection with a solution of sugar into the lumbar region of the sac. When the anaesthetic solution is a mixture of diffusible substances, each component diffuses at its proper rate, as in a test tube, subject to the selective action, if any, of the mural cells. Hence the continuous action of the drug at its original 5 per cent. strength is very brief in whatever part it may reach by gravitation with a heavy menstruum.

By osmosis through the pia matral sheath tropacocaine invades the spinal nerve roots in the sac, and inhibits their conductivity. The same statement probably holds good in regard to the spinal cord to a degree far short of complete transverse blocking.

When the drug diffuses into the cranium it is similarly conveyed by osmosis to the medulla and other underlying nervous structures. This appears to be a consideration of greater weight than is generally held, and I suggest that the contingent risks of spinal anaesthesia by the drugs now in use would be largely reduced if their toxic effect on the medulla could be counteracted. Attenuation of 1 grain of alkaloid in 2 oz. of cerebro-spinal fluid is not sufficient protection to the medullary centres when their stability has been undermined by serious disease. Nor should it be overlooked that the action of poisons inserted in the cerebro-spinal sac is far more intense on the nervous system than when they are conveyed by the blood stream.

Falkenheim and Naunym have shown that drainage from the cranio-vertebral canal is mainly via the cranial portion and into the venous sinuses. The diverticula of the sac projecting into the longitudinal and cavernous sinuses (Pacchionian bodies) afford an easy route directly into the blood, but probably the theca is everywhere permeable. Mestrégat holds that permeability is only in one direction—namely, from the cerebro-spinal sac to the blood. The outward current is far from sluggish, for Leonard Hill has found methylene blue in the bladder and stomach within twenty minutes of its injection into the sac. Since the freezing-point of cerebro-spinal fluid is — 0.59° C. and of the tropacocaine solution —1.13° C., the osmotic pressure is increased.

Little is known as to how long an anaesthetic may remain in the spinal canal. Rehn noted the presence of tropacocaine, novocain, and stovaine in the sac three hours after injection, and his observations led him to conclude that tropacocaine was the first to be eliminated by the kidneys and stovaine the last. Barker has found stovaine still present in the sac twenty-four hours after injection; in a specimen he obtained forty-six hours after he could find no stovaine, but the fluid was turbid and contained leucocytes. In one instance in which I withdrew cerebro-spinal fluid forty-one hours after injection of tropacocaine an analysis made for me by Allen and Hanburys detected no trace of an alkaloid; moreover, the fluid was perfectly clear and free from opalescence. Barker has detected traces of stovaine in the urine as late as the seventy-fifth hour after injection; this substance is therefore expelled very slowly.

Lowering of Blood Pressure.

The danger incidental to spinal anaesthesia lurks in the lowering of blood pressure. A rapidly induced and transient depression equal to 30 mm. of mercury may be tolerated by a person in sound general health, whereas in the presence of grave morbid conditions the consequence may be alarming.

In a number of cases I have had the blood pressure noted during operation; as a rule it fell within three minutes of injection, reaching the lowest point in about ten minutes; and I have known the descent amount to 50 mm. of mercury. But in some cases there was no fall of blood pressure, and in one a rise was noted.

I attribute the phenomena of faintness and respiratory depression to three causes acting in sequence and then in conjunction: (1) Blocking of afferent paths; (2) paralysis of intercostal muscles; (3) toxic impairment of medullary centres.

1. The area of the body switched off temporarily from functional connexion with the central nervous system is very extensive. In normal states every tissue emits a continuous stream of organic sense impulses flowing to the centres and influencing their functions. A single impulse, to be sure, is minute, but the abrupt interception of multitudinous impulses, however small in the unit, cannot be a light matter, and may derange the complex mechanism of the great centres beyond recovery. Such an event, though possible in any case of extreme asthenia, is of very rare occurrence; but more or less depression of the blood pressure is frequent.

In the case cited above dangerous signs ensued within three minutes of injection. Setting aside as negligible quantities the slight change of tension in the cerebro-spinal sac and the minute dose of alkaloid absorbed into the circulation, afferent blocking appears to be the proximate cause of the phenomena.

2. The observations of Gray and Parsons, confirmed by their research work in this university, prove that a rapid fall of blood pressure is associated with impairment of thoracic breathing as the dorsal nerves become inhibited and the intercostal muscles put out of action. This factor, however, does not operate in every case.

3. Toxic effects on the medulla may reasonably be expected to coincide with diffusion of the drug into the cranium, and are probably reinforced by the small amount circulating in the blood stream. Not infrequently low arterial tension and faintness supervene ten to twenty minutes after injection, in spite of ample costal breathing. The additional factor that has here come into play is poisoning of the medullary centres.

SCOPE OF THE PROCEDURE.

No progressive step in surgery can escape the ordeal of a probationary stage for the appraisement of its value, and during the past ten years spinal anaesthesia has been submitted to stringent tests at the hands of many operators bent on learning the facts about its alleged merits and demerits. Speaking for myself after unbiassed and ample experience, I am convinced that spinal anaesthesia has established its claim to be considered a distinct advance in practice and its right to a recognized place in our equipment. This is far from implying that other methods can be dispensed with; but the time has come to concede that spinal anaesthesia is entitled to a deservedly high position in their company.

Region.

The best way of demonstrating the possibilities of the procedure is to point out what has been done by its aid. Accordingly, I submit a table giving a broad classification of my cases at the Queen's Hospital:

SPINAL ANAESTHESIA BY TROPACOCAINE.

List of Operations.

Ablation of penis	1	For hernia (umbilical)	4
Ablation of penis and testes	1	For hernia (ventral)	11
Amputation through knee	3	For hydrocele	36
Amputation through leg	4	For ruptured ectopic gestation	2
Amputation through thigh	10	Gastro-enterostomy	7
Appendicectomy (acute stage)	61	Gastrostomy	3
Appendicectomy (quiet stage)	85	Jejuno-jejunostomy	1
Cholecystectomy	5	Laparotomy	24
Cholecystotomy	13	Nephrectomy	5
Choledochotomy	3	Nephropexy	30
Colotomy	10	Nephrotomy	8
Cystotomy and cystoscopy	36	Oöphorectomy	1
Division of anal fistula	92	Orchectomy	10
Enterectomy	3	Ovariotomy	2
Excision of rectum	3	Plating and suturing bones	12
Excision of semilunar cartilage	12	Prostatectomy	5
Excision of tumours	30	Sciatic nerve stretching	3
Excision of varicocele	63	Sequestrotomy	13
Excision of varicose veins	63	Ureterotomy	2
For haemorrhoids	124	Urethrotomy	18
For hernia (femoral)	34	Miscellaneous	67
For hernia (inguinal)	375	Total	1,295

These cases, which are consecutive and in no way selected, have been open to observation in a public institution, and under the close scrutiny of a succession of house-surgeons whose interest and assistance I cordially acknowledge. My records show that many types of subdiaphragmatic operations have been successfully performed under tropacocaine. I do not advocate carrying the upper limit above the diaphragm (although in one case I resected a piece of the sixth rib), but the table definitely proves that below the costal border any operation is practicable under spinal anaesthesia.

Jonnesco of Bucharest uses the method for all his operative work, employing for the purpose a mixture of stovaine and strychnine. By injecting through the first dorsal space he is able to operate painlessly on any part of the head or upper limb at pleasure. In this country Jonnesco's practice has very few adherents, and the reports which have come to my knowledge are so discouraging that I am opposed to this extension pending the introduction of safer means.

As at present advised, therefore, I exclude from the legitimate province of spinal anaesthesia all parts of the body above the level of the xiphisternum.

With regard to the suitability of the patient, the question may be considered in relation to age, disease, and psychic state.

Age.

I am not aware of any prohibitive age limit at either extreme of life, certainly not after the age of 1 year. The youngest in my series was a case of intussusception in a baby 11 months old, sent by Dr. Kirby of Smethwick. The dose I injected—namely, 6 minims—was needlessly large and induced shallow breathing, though not to a degree requiring artificial respiration. The stillness of the abdomen rendered the operation of laparotomy and reduction of bowel from the splenic flexure a simple matter, and recovery was uninterrupted. In a child aged 2 years a dose of 5 minims had to be supplemented by a second injection of 4 minims, after which he showed his indifference to the proceedings by going to sleep during the operation for radical cure of his hernia.

The oldest case in the series was a man, aged 81, for whom I did partial resection of a carcinomatous bladder. Here, too, the method was very successful, and a good recovery followed. (In private the method answered well in an operation on a lady, aged 95, whom I saw in consultation with Dr. J. H. Brice, of Edgbaston. She was suffering from intestinal obstruction, for which subumbilical colotomy was performed; this gave temporary relief but not a new lease of life, and she died from exhaustion the next day. The nurse, who was prejudiced against spinal anaesthesia by what she had seen of stovaine injection elsewhere, expressed great satisfaction on noting the patient's good general condition and freedom from pain during the operation.)

Physical State.

Coming to the question of a patient's physical condition of disease or health in its bearing on spinal anaesthesia, what here follows is to be taken subject to the provisoes that the proposed operation is within the region assigned to the method, and that the contraindications mentioned below are excluded. The ground is partly cleared by the fact that opinion is unanimously in favour of the method where there is serious respiratory trouble, impending uraemia, diabetes, and heart disease with broken compensation. It is also held to be preferable when an emergency operation has to be done on a patient who has just had a meal. These points are settled by consent, and the wide field beyond will be more or less occupied by spinal anaesthesia according to a surgeon's confidence in the method. My own experience tallies with that of others who have found the results so satisfactory that they have come to apply the method wherever feasible, irrespective of the patient's physical state. I have dealt with all gradations between robust health and extreme illness. Healthy persons—for example, young men requiring radical cure of hernia—give no anxiety either at the time or afterwards, and, so far as I know, a fatality in this group has never been recorded. At the other end of the scale, where the power of resistance is reduced to the verge of zero and life is trembling in the balance, the weight of a feather may turn the issue the wrong way. In these circumstances it is perilous to add to the ravages of disease the burdens imposed by emotional disturbance, an anaesthetic, and an operation; and not only is the death-rate necessarily high, but it is also impossible to assess the proportionate influence of the several adverse factors. Hence the fallacy of figures purporting to measure the comparative risks of anaesthetics. I believe, however, that in the critical conditions here contemplated spinal anaesthesia offers the best chance, however slender that chance may be; and I am satisfied that the formidable element of surgical shock is excluded by the barrier set in the path of afferent impulses. The power of preventing shock or the increase of existing shock is precisely the attribute above all others which distinguishes spinal anaesthesia as a means of life-saving in connexion with surgical acts of unusual hazard.

Acute abdominal lesions present a specially promising field for several reasons. Not only is there immunity from systemic surgical shock, but the local form which results in paresis and subsequent distension of bowel is likewise in abeyance. Moreover, the muscular walls offer no resistance to retraction of the wound or to its closure by sutures; and the intestines show no tendency to gush from the cavity, partly because of the remarkable stillness resulting from quiet breathing and the absence of forcible straining, and partly because peristalsis is not inhibited. Handling and replacement of protruding loops of bowel are thus minimized and exploration greatly simplified. Further, there is an important post-operative advantage in the relative non-liability to vomiting with its attendant risks of disturbance of the wound and abdominal contents. Taken collectively these favourable features constitute a strong plea in support of the method, and I have proved their value in many cases, among which may be cited closure of perforated typhoid and other ulcers, resection of gangrenous bowel, and operations for acute intestinal obstruction and septic peritonitis.

No surgeon who has given the procedure a reasonably

extended trial will entertain the smallest doubt that by its aid he has saved lives which would otherwise have been lost; and no surgeon who intends to keep in touch with progressive methods would feel justified in ignoring the evidence now forthcoming as to the utility and relative safety of spinal anaesthesia.

Chronic alcoholics are welcome neither to the anaesthetist nor to the surgeon; but they are relatively good subjects for the spinal method, in the sense that they are very obnoxious to ether and chloroform—hard to get under, and hard to keep under within safe limits of narcosis. A patient of this type reaps the full benefit of the physical calm peculiar to spinal anaesthesia in all stages before, during, and after operation. Within three or four minutes of the injection he passes without struggle or excitement into a state of quiescence marked by paresis of all muscles below the ribs, and this condition is maintained throughout and beyond an average operation. Whether the patient be an alcoholic or not, and whatever the form of his disease, violent muscular efforts during or just before an operation are always injurious, and in some abdominal conditions are attended by grave risks. The absence of all physical excitement is one of the most attractive features of spinal anaesthesia.

I have not found acute haemorrhage a deterrent. Two cases of ruptured ectopic gestation with copious bleeding were dealt with on the same day—one, a patient aged 29, sent to me by Dr. Mold of Halesowen; the other aged 24—and both did well in every respect.

Psychic State.

Familiarity with narcosis as the only means to an operation is apt to produce a prejudice in its favour, and it might be supposed that all patients would prefer not being conscious during an operation. I find, on the contrary, that few object to the spinal method on that ground; the point of view of many is well expressed by the remark of the man who said he objected to chloroform because he wished to be present at the operation. Once anaesthesia is established, all misgiving vanishes and confidence comes to the most timid.

I have been repeatedly told by patients who have experienced both methods that their preference was strongly in favour of the spinal. As the public become more acquainted with the possibilities of the procedure a larger number of patients will ask for its benefits.

Common to all methods is the factor of some measure of dread with which an operation is generally anticipated. At times this amounts to positive terror, which a nervous patient may be quite unable to control, and which may be more than embarrassing to the anaesthetist and his helpers who are called upon to overcome resistance by force. It is a great relief to all concerned to know that such a distressing and dangerous stage before the performance of a critical operation can be avoided by the use of spinal anaesthesia within its province.

On the other hand, there is undoubtedly a class of patients, more numerous in private than in hospital practice, who dread the idea of consciousness while undergoing an operation, and in the best interests of these complete oblivion of their surroundings may be necessary. If so, it is quite practicable to make use of general and spinal anaesthesia in sequence. Very excitable, sensitive persons are not satisfactory subjects for anaesthesia, but they should not be ruled out of the benefit of the spinal method as though their psychic condition were an absolute contraindication. Hysterical, neurotic women often prove most amenable to tropacocaine, especially if given scopomorphine in advance. Without this supplement emotional persons respond to the moral atmosphere of cheerfulness created by the bearing and remarks of the surgeon and nurses. Before giving the injection I make a point of explaining to patients the steps of the procedure, and the change of sensation it is intended to produce; they are thus prepared for what follows, and generally show a pleased interest in the phenomena. It does more harm than good to worry nervous patients by testing for anaesthesia, or by asking questions that suggest the possibility of pain, particularly when the action of the drug falls short of a complete blocking of all impulses, for they will probably imagine a great deal and misinterpret vague sensations as pain, besides becoming more self-centred. The twofold aim with such persons is to gain their confidence and divert their attention from the actual operation.

Contraindications.

I have made it an invariable rule to require a patient to remain in bed for several days after spinal injection, and I certainly would not sanction the procedure unless it was going to be followed by at least twenty-four hours' complete rest. Otherwise I should expect trouble from by-effects. Out-patient practice is clearly outside the pale, and is, therefore, an emphatic contraindication.

And so is the presence of septic inflammation, suppuration, or eruptions near the desired site of puncture. I have met with several cases where I have declined to give an injection because of one or other of these conditions.

I have not knowingly used the method in a case of disease of the central nervous system; any such disease would make one hesitate; and above all, cerebral tumour must be deemed an absolute bar because of the risk attaching to alteration of intracranial pressure.

Reviewing a long series embracing various local and constitutional states I see no case made out for adding to the foregoing short list of conditions positively contra-indicating spinal anaesthesia by tropacocaine. It has been urged that pyaemia is a deterrent; this may be so, but it is not a common disease, and the occasions in its course when the procedure might be suggested are few and far between; no such occasion has presented itself to me. More important than the label of a particular disease is the question of how far the power of resistance has been sapped by morbid processes.

Failures.

In three cases I have failed to enter the theca owing to spinal abnormality, complicated in one case by obesity. The latter condition prevents exact definition of the spines; if I had to deal with such a case where spinal anaesthesia was specially indicated owing, for example, to severe bronchitis, I would not hesitate to incise through the fat with the aid of local anaesthesia so as to make palpation of an interspinous space possible. In like circumstances of urgency an incision may also be advisable in a case of bony deformity.

In 14 cases—that is, a fraction over 1 per cent.—there was no anaesthesia, or it was too slight to be of service, and a general anaesthetic was administered. It is to be presumed that the prescribed dose of the drug was too small, or that a portion was not lodged within the cerebro-spinal sac, or that the solution rapidly leaked into the extradural space. Whatever the explanation of these exceptional failures, the possibility of their occurrence must not be forgotten, and provision should always be at hand for the induction of general anaesthesia. Moreover, when sensation returns before an operation is completed, a general anaesthetic will often meet the indication better than a second spinal injection. There are 19 cases of that class in my list.

It is seen that a general anaesthetic was required on 36 occasions—throughout in 17 operations, and during the later stage in 19. On the whole series this gives a percentage of 2.8 nearly.

Mortality.

In the series here reviewed, reserving 1 case for separate record, there was no death attributable to the spinal injection. The total number of deaths was 21, which gives a death-rate of 1.6 (nearly) from all causes. The case referred to belongs to the thirteenth hundred of the series, and is summarized as follows:

The patient was a woman, aged 56, sent to me by Dr. Ewart Ashton, of West Smethwick. She had been bed-ridden for months suffering from calculous pyonephrosis, and was worn out with hectic fever and pain. She was also diabetic, and on admission it was obvious that she was desperately ill. A general anaesthetic could not be entertained, and it seemed improbable that local anaesthesia would suffice for the operation required on the left kidney.

Accordingly 15 minims of tropacocaine solution, that is, ¾ of a grain, was injected between the twelfth dorsal and first lumbar vertebrae, the patient being on her left side. The anaesthesia was perfect, and the patient's condition was no worse throughout the operation, which consisted in the evacuation of about one pint of pus and several calculi; no attempt being made to remove the adherent shell of the obsolete left kidney. The cavity was lightly packed with gauze and the wound partly closed with sutures. Shortly after removal to the ward she became collapsed, and despite prompt treatment with injections of

ether and strychnine, she died about fifty minutes after the spinal injection.

Permission to make a formal *post-mortem* examination was refused, but the right kidney and the heart were examined through the operation wound. There was no haemorrhage into the wound. The kidney was hydro-nephrotic, contained calculi, and its cortex was thin. The heart was fatty, and its musculature very soft.

Reflecting on this case it is difficult to say what part, if any, tropacocaine had on the issue. The patient had put off surgical help until too late, and her frail tenure of life was nearing its limit. Whether she would have survived the operation under any form of anaesthesia is a question on which critics will form their own judgement. One thing is clear: her condition was not worsened during the anaesthetic stage, and the collapse coincided with the return of sensation as the effect of the drug receded and painful impulses flowed to the medulla. It is also possible that hyperaemia of the wall of the large abscess on escape of its contents increased the liability to syncope and cerebral anaemia.

Combination of Anaesthetic Drugs and Methods.

Attempts have been made to achieve better results by injecting a mixed solution of a spinal anaesthetic and some other drug. Thus adrenalin or suprarenin borate has been combined with tropacocaine, stovaine, and novocain respectively, and by rendering tissues anaemic it might be expected to delay absorption, and so prolong anaesthesia, besides raising the blood pressure. Some acquaintance with the compound tropacocaine preparation did not disclose to me any superiority over the simple solution.

Another combination of stovaine advocated by Jonnesco for very high anaesthesia is with neutral strychnine sulphate. By its power of increasing the reflex excitability of the cord strychnine probably helps the transit of weak impulses between the neurons, and may thus fortify the respiratory mechanism. Nevertheless it cannot be relied on as an absolute safeguard, for fatal respiratory failure has followed its use, and has even been ascribed to spasm caused by the strychnine. The unquestionable risks of very high anaesthesia, whether mitigated by strychnine or not, are too great to justify the procedure at present; and for low anaesthesia strychnine has a tendency to shorten the duration.

Atropine and other substances are being tried, and an improved combination may yet be discovered.

The spinal method may also be used advantageously in sequence when a double anaesthesia, central and peripheral, is indicated. Thus it may be preceded by scopolamine and morphine given under the skin, or it may be followed or preceded by inhalation drugs. In cases of nephropexy it is my rule to give a subcutaneous injection of scopolamine $\frac{1}{100}$ grain, and morphine $\frac{1}{3}$ grain, one hour before operation; and I adopt the same practice generally in cases where the element of neurosis is conspicuous, or where the operation is near the diaphragm or likely to be prolonged. Quite commonly when this is done the patient sleeps through the operation with perfectly quiet breathing and no tendency to vomit.

If a general anaesthetic follows the spinal very little is wanted to induce sleep. I have on several occasions found it advisable to reverse the order of succession, beginning with light inhalation narcosis, and following up with the spinal method; here, too, the quantity of vapour inhaled has been very small.

Conclusions.

Admitting the high claims of stovaine and novocain, but restricting my remarks to tropacocaine, I sum up the position of spinal anaesthesia as follows:

1. It is a procedure of proved value and simple technique.
2. Its province is subdiaphragmatic operations.
3. There is no prohibitive age limit.
4. By blocking afferent paths it prevents surgical shock.
5. It induces muscular relaxation, quiet breathing, and abdominal stillness, and thus conduces to rapidity and safety in abdominal surgery.
6. Used with discretion in conditions of extreme asthenia and instability of the medullary centres due to toxaemia, exhausting disease, traumatic shock, and old age, it is superior to ether and chloroform.
7. It promotes the patient's comfort and nutrition in the post-operative stage.
8. Its scope is amplified with the aid of scopolamine and morphine.
9. By lowering blood pressure it tends to faintness and respiratory depression. The patient should therefore be carefully watched after injection, and treated as required by means of diffusible stimulants, pituitrin, saline infusion, and artificial respiration.
10. In a small percentage of cases it is inadequate, and must be supplemented by general anaesthesia.
11. It increases the possibilities of surgery by facilitating the work of a surgeon in the absence of a competent anaesthetist or assistant.
12. The procedure should be taught in medical schools.

THE LACRYMAL GLAND IN SURGICAL ANAESTHESIA.

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A series of careful observations on the behaviour of the lacrymal apparatus during the administration of certain anaesthetics has shown that the presence or absence of the lacrymal secretion is a useful and constant indication of the depth of narcosis. In over 200 cases, where the behaviour of the lacrymal glands was noted, it was found that the information thereby gained was constant and accurate, as shown by the presence of other signs and the subsequent progress of the cases.

It may seem surprising that any point of importance to the anaesthetist should have escaped attention, or at any rate mention, for so long a period, and the explanation appears to be that, since in the excitement stage of anaesthesia the lacrymal secretion is copious and the inner canthi become flooded, unless the pools of secretion be wiped away, no further indication of the lacrymal activity will attract attention. It may be that those who have observed the phenomenon of the lacrymal secretion have tested its value carefully and found it useless; in which case one can only regret that no mention of such work has been made in recent textbooks.

In an uncomplicated case, where anaesthesia is induced by the administration of chloroform or ether, the anaesthetist has no difficulty in regulating the amount of anaesthetic required by carefully observing the well-known signs of anaesthesia. In other cases the patients may react abnormally to the drug in one or two respects, as, for example, when the pupils remain large throughout the administration or when the corneal reflex is abolished abnormally early. Such cases present no real difficulty, since the abnormality is easily recognized and avoided. But cases are occasionally met with in which the anaesthetist has the greatest difficulty in securing a quiet anaesthesia, and where, in maintaining a constantly flaccid abdomen or other desirable condition, the resources of his craft are taxed to the utmost. It is in cases such as these that every sign or symptom is of value, and, although in no case can we afford to neglect a reliable sign, it is here especially that the lacrymal activity is of service.

I will now discuss (1) the behaviour of the lacrymal glands during the various stages of anaesthesia, and (2) the special importance of the lacrymal secretion in differentiating the dilated pupil of overdose from that of impending vomiting.

I.

The symptoms and signs observed during the inhalation of chloroform will suffice to illustrate the stages of anaesthesia seen when chloroform, ether, or a combination of these drugs is administered. Four stages are usually described: (1) A preliminary stage; (2) an excitement stage; (3) a stage of surgical anaesthesia; and (4) a stage of overdose.

The preliminary stage appears during the inhalation of the first few breaths of anaesthetic, and is made up of many components. The vapour irritates the nasal and bronchial mucous membrane, and reflex coughing and

salivation, with holding of the breath and slowing of the heart may be observed. Next, we notice disturbances of judgement, loss of memory and self-control, and often emotional tendencies. The special senses are next affected, and analgesia is well marked. The pulse-rate increases, and the blood pressure begins to rise; with this rise of blood pressue the respiratory-rate is increased. The pupils are now widely dilated. Here the first stage ends, and delirium, varying from shouting and singing to inarticulate muttering, ushers in the excitement stage.

In the first stage the activity of the lacrymal glands varies according to the strength of the irritation in the nose and tubes, and, if no vapour impinges on the corneae, the canthi may remain dry. With the onset of the excitement stage, however, the lacrymal glands become excessively active, and pools of secretion appear at the inner canthi, and from thence overflow on to the face. Tonic and clonic muscular spasms, coughing, retching, and vomiting may also be observed at this stage. The reflexes are diminished, and the patient is unconscious. The third stage is indicated by a general muscular relaxation, which at times appears quite suddenly, a loss of body reflexes, a steadying of the respiratory rhythm, a fall in blood pressure and temperature, and a decrease in the size of the pupils. During this stage of surgical anaesthesia the lacrymal glands cease to secrete, and the canthi, if dried after the excitement stage, remain so. The cessation of the lacrymal secretion usually takes place a few breaths before the complete abolition of the corneal reflex, although the disappearance of reflex and secretion may occur simultaneously.

The fourth stage, or stage of overdose leading to bulbar paralysis, is ushered in by dilating pupils, and this is followed by a fall of blood pressure, a loss of bladder and rectal reflexes, a shallowing and cessation of respiration, and a great depression of the cardiac muscle (in the case of chloroform). Here, in the stage of overdose, we find that the lacrymal glands are inactive. The canthi are dry, the pupils are widely dilated and inactive to light, the corneal reflexes are abolished, and the tone of the orbicularis palpebrarum is diminished.

Such, then, are the four stages seen in some cases of chloroform narcosis, and may be found similarly described in every textbook, with this exception—that the textbooks make no mention of the lacrymal activity.

We find that in the first stage the internal canthi may be wet or dry, in the second stage the lacrymal glands are always active, and in the third stage that the lacrymal secretion ceases at the same time as the earliest reflexes disappear, and that this cessation usually precedes the abolition of the corneal reflex by a very short interval. The slight variability in the time of cessation of the lacrymal secretion is of no practical importance, for in no case do the glands continue to secrete *after* the abolition of the normal corneal reflex (the term "normal corneal reflex" is used here purposely to distinguish it from the "diminished corneal reflex" observed after a time in an eye which has been continuously or carelessly tested). The moment at which the lacrymal secretion is first observed, after its cessation under the influence of chloroform or ether, is of the utmost importance, and provides a reliable indication of the exact moment at which to continue the administration, if a satisfactory surgical anaesthesia is to be prolonged. The time of the cessation of the lacrymal secretion during the induction period corresponds almost exactly with the time of its reappearance during the recovery period, and it is on this account that the "canthal" tear is so valuable, for it indicates when present that the corneal reflex is (or should be) obtainable, and that the amount of the anaesthetic is as much as is compatible with successful anaesthesia. If, then, we administer our anaesthetic in quantities just calculated to abolish the lacrymal secretion and then wait, if at any time in doubt, until the secretion again appears, we may feel confident that we are well on the safe side of the border line between deep surgical anaesthesia and an overdose.

The exhibition of such drugs as morphine, hyoscine, and atropine in a large number of cases completely abolishes the lacrymal secretion, and here it must also be noted that there are certain individuals, usually children under 10 years of age, in whom the lacrymal glands appear to be unaffected by the narcotics, and who, while under the influence of chloroform or ether, show no evidence of lacrymal gland activity. Such cases are rare, and do not detract from the value of the secretory phenomenon, since the absence of the secretion is evident during the excitement period, and hence this sign is neglected for the rest of the anaesthesia.

II.

The special importance of the presence or absence of the lacrymal secretion in differentiating the dilated pupil of overdose from that of impending vomiting is at once apparent. Those who affirm that it is possible to elicit a corneal reflex when the dilated pupil of "impending" vomiting is present will consider that no further differentiation is necessary; those who agree with me that only in the dilated pupil of "immediate" vomiting is it possible to obtain such a reflex will admit the value of a further test. The condition of the pupils in impending vomiting and in overdose are very similar; both may be inactive to light, neither retains a corneal reflex as a rule, and the accompanying signs and symptoms may give but little assistance to the administrator. It is in such cases that the value of the canthal pools is evident. If the canthi have been kept dry up to the moment at which the pupils commence to dilate, and if they remain dry after the pupils are dilated, then the anaesthetist should at once withhold the anaesthetic and prepare to deal with a case of relative or absolute overdose; but if the canthi are seen to be flooded with tears then the anaesthetic must be pressed to secure an adequate anaesthesia by abolishing the vomiting reflex.

Those who are experienced in the administration of anaesthetics and who subconsciously observe every little detail during the administration will affirm that at no stage should the administrator be in doubt as to the depth of narcosis. Nevertheless, it must be remembered that a large proportion of medical men called upon to act as anaesthetists have had but little experience with narcotics, and to such people, especially, an easily remembered and reliable indication of the depth of narcosis is valuable.

In some of the cases examined it was possible to show that although the corneal reflex could not be evoked during the stage of "impending" vomiting, nevertheless it reappeared occasionally a few seconds before vomiting actually commenced, in that period of time which has been alluded to as the period of "immediate" vomiting.

In the course of the investigations undertaken to establish the reliability of the lacrymal activity as a means of regulating the amount of the narcotic employed, over 200 cases were anaesthetized for operations varying in severity from the opening of a superficial abscess to the resection of several inches of intestine. Naturally many slight variations in the behaviour of the lacrymal glands were observed; but these variations were of no practical importance, and may be divided into variations (*a*) In the quantity of the secretion, and (*b*) in the time at which the secretion appeared and disappeared relative to the presence or absence of the corneal reflex. This latter variation has already been discussed. As regards the former, when chloroform is administered alone the quantity of the lacrymal secretion is usually small. During the administration of ether the lacrymal secretion is abundant, and in giving mixtures containing ether, the quantity of secretion does not fall much below that observed when ether is given alone.

Conclusions.

In conclusion, I would insist on the truth of the following three statements:

1. That since the appearance of a lacrymal secretion during anaesthesia is a constant phenomenon, it therefore deserves mention in books devoted to the subject of anaesthetics.

2. That the lacrymal secretion, bearing as it does a definite relation to the depth of narcosis, is of value to the anaesthetist.

3. That since the behaviour of the lacrymal glands under anaesthesia is almost constant, and since the exceptions to the general rule are easily recognized, the value of this sign as an aid to the administration of an anaesthetic must be at once apparent.

SLEEPING SICKNESS AND BIG GAME:

A PROPOSED EXPERIMENT.

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DURING the years 1908 and 1909 the diagnosis of several cases of human trypanosomiasis amongst Europeans, who had never been in contact with *Glossina palpalis*, drew attention to the occurrence of the disease in portions of Rhodesia and Nyasaland in which this particular insect does not exist.

In 1910 it was shown that the parasite causing the disease in Rhodesia and Nyasaland differed in certain respects from that causing sleeping sickness in other portions of tropical Africa. The name *Trypanosoma rhodesiense* was given to this new parasite. Since these discoveries many cases of sleeping sickness have been found in Rhodesia and Nyasaland, and in 1911 Dr. Kinghorn and I were sent to North-Eastern Rhodesia to investigate and report upon the conditions governing the spread of the disease in that country.

The first problem we had to solve was to ascertain the vector responsible for the spread of sleeping sickness in a country where *Glossina palpalis* does not exist. Now, although *Glossina palpalis* has not been found either in Nyasaland or in the Luangwa Valley of Rhodesia, yet *Glossina morsitans*, the tsetse fly which is known to cause "fly" disease in domestic stock, is present in enormous numbers, and it was soon proved by Dr. Kinghorn and myself that it is this fly that is responsible for the spread of human trypanosomiasis. This discovery is one of great practical significance; for whereas the former fly, *Glossina palpalis*, is limited in its distribution to watercourses, and never found far from the banks of certain rivers or the lake shores, the latter, *Glossina morsitans*, is ubiquitous, its distribution being quite independent of water. Hence it is obvious that it is impossible to attempt to deal with sleeping sickness in Rhodesia and Nyasaland by any such simple method as removing the native population away from the watercourses and lake shores, a procedure which was attended with such remarkable results in Uganda. The problem of preventing the spread of sleeping sickness in these countries, which a few years ago were thought to be in no danger, is one of infinitely greater difficulty than was that which had to be faced in Uganda.

A large number of wild *Glossina morsitans* were examined in the Luangwa Valley in order to ascertain what proportion were capable of infecting man with trypanosomiasis. This information is important, as it affords an approximate idea of the potential danger of the district. We found that 1 in 500 wild *Glossina morsitans* was infective. As this was far too large a proportion to have been infected from the comparatively few infected human beings, it was evident that some other host than man must serve as the reservoir from which the fly derives its infection. With the object of ascertaining what was the chief vertebrate reservoir of the virus, we examined 250 wild animals (including elephant, rhinoceros, hippopotamus, lion, buffalo, fourteen different kinds of antelope, caracal, galago, squirrel, genet, hunting dog, giant rats, and wild rabbits), 256 monkeys, 35 domestic stock, 142 wild rats, and 15 wild mice, making a total of 698. The results were striking; a large proportion of the antelope were found to be infected with the parasites which cause sleeping sickness in man and trypanosomiasis in domestic stock. As a conservative estimate, the percentage of game infected with the trypanosomes of man or domestic stock might at Nawalia in the Luangwa Valley be placed at 50, and at Ngoa on the Congo Zambesi watershed at 35.

Beyond stating that the figures in the accompanying tables refer only to the trypanosomes causing disease in man and his flocks and herds, it is unnecessary here to go into details as to their exact nomenclature. I might mention, however, that at Nawalia in the Luangwa Valley 16 per cent. and at Ngoa on the Congo Zambesi watershed 3.3 per cent. of the wild animals were infected with the human trypanosome, *T. rhodesiense*.

TABLE I.—*Percentage of Various Species of Game Found Infected with Trypanosomes Pathogenic to Man or Domestic Stock at Nawalia, Luangwa Valley.*

Animal.	Number Examined.	Percentage Harbouring Trypanosomes.
Bushbuck	9	66.6
Waterbuck	28	60.7
Kudu	7	57.1
Hartebeest	6	16.6
Roan	8	12.5
Warthog	9	11.1
Puku	10	10.0
Mpala	29	6.9

TABLE II.—*Percentage of Various Species of Game Found Infected with Trypanosomes Pathogenic to Man or Domestic Stock at Ngoa, Congo Zambesi Watershed.*

Animal.	Number Examined.	Percentage Harbouring Trypanosomes.
Sitatunga	2	50.0
Waterbuck	27	44.4
Eland	15	26.6
Duiker	9	22.2
Roan	5	20.0
Puku	8	12.5

This investigation, therefore, made it clear that the main reservoir of the trypanosomes of man and domestic stock is the big game.

Having ascertained these two essential facts—namely, that the tsetse fly, *Glossina morsitans*, is the agent by which the disease is spread and that the big game is the inexhaustible reservoir of the virus which causes the disease—we are faced with the problem of what, in the light of this knowledge, can be done to stamp out sleeping sickness or to limit its spread in Nyasaland and Rhodesia. Obviously the most satisfactory means of prevention would be the extermination of *Glossina morsitans*, which conveys the parasite from one vertebrate host to another. Unfortunately, however, this is out of the question at the present state of our knowledge. The only known method of getting rid of the fly from a district is by clearing away the bush. In the immediate vicinity of villages such a procedure is doubtless feasible, and would be attended by valuable results, and natives should be encouraged to do everything possible in this direction. The labour involved in clearing large tracts of country would, however, be so great that this method can be at once set aside as impracticable. Moreover, it must be remembered that not only would the country have to be cleared, but it would require to be kept cleared. Every one who has had experience of tropical Africa is familiar with the dense shrub growth which springs up in the site of old garden clearings two or three years after the natives have ceased cultivating the land. This shrub growth is exceedingly favourable to *Glossina morsitans*, so that, unless the country be kept constantly cleared, the last state of the district is worse than the first.

At present little is known of the bionomics of *Glossina morsitans*. Investigations so far carried out indicate that this tsetse fly has no breeding-places which are peculiar to it, but that its pupae are deposited in a more or less haphazard manner in hollow trees and excavations where they are not likely to be disturbed by game birds. Regarding the liability of the fly to disease and of its natural enemies practically nothing is known. Much more information is required on this subject, but it seems only too obvious that the investigations will be beset by great difficulties, and that knowledge will only be forthcoming as the result of much slow and tedious work. In fact, to those familiar with *morsitans* country the extermination of the fly must seem an almost impossible procedure.

In Uganda, where the disease is spread by *Glossina*

palpalis, the removal of the population a short distance away from the lake shores and watercourses was followed by most excellent results. Such a measure, however, is impossible in Nyasaland and Rhodesia, where the vector, *Glossina morsitans*, is practically ubiquitous in its distribution and not limited to watercourses as is *Glossina palpalis*.

In view of the impossibility of exterminating the fly and of the equal impossibility of removing the population from the fly belts, we must consider the only way that remains of combating the disease—that is, the advisability of attempting to destroy the reservoir of the virus. It is obvious that the mere isolation of infected human beings is futile in view of the fact that the main reservoir of the virus is the blood of the big game.

Since the beginning of last year, when Dr. Kinghorn and I published our paper announcing the fact that a large proportion of the wild fauna of Africa harboured the trypanosomes of man and domestic stock, a considerable polemic has arisen over the question of the advisability of attempting to exterminate the big game in the vicinity of human habitations in fly areas.

In discussing this subject it appears to me that I could not do better than state briefly what I suggest should be done and then reply to some of the more important criticisms which have been directed against these proposals.

In the first place, I consider that a decisive scientific experiment, the nature of which I will outline later, should be undertaken with a view to ascertaining the effects of completely eradicating the game in a limited area. As some years must elapse before the results of such an experiment would be known, I suggest that in the meantime the restrictions relating to the killing of game by Europeans and natives should be removed in those portions of the fly areas which are in the vicinity of human habitations.

It has been suggested that if the game be destroyed in any district, the fly, being deprived of its natural source of food, might turn its attention solely to man and his flocks and herds. It appears to me that little importance should be attached to this hypothesis; cattle do not, as a rule, live in the presence of *Glossina morsitans*, and the fly does not invade villages around which there is a clearing, even though at the present time they could by so doing obtain food, perhaps, still more readily than they do in the bush. Moreover, if the game be removed the reservoir of the infection is destroyed, and therefore in a short time the fly would tend to become non-infective. The bite of non-infective *Glossina morsitans* hurts nobody. Finally, there is absolutely no evidence indicating that if the big game in any particular district were slaughtered the tsetse fly, unable to obtain blood from these animals, would attack man and domestic stock to a greater extent than at present. It might equally well be urged that if the food supply of the fly be removed the fly would disappear. There is, moreover, a considerable amount of evidence that the tsetse fly spreads with the game. For example, since the rinderpest swept through Central and South Africa sixteen or seventeen years ago the big game has increased enormously in numbers, and with this increase in game there has been a corresponding increase of tsetse fly. Although *Glossina morsitans* was present in enormous numbers at Nawalia, in the Luangwa Valley, when we were working there, and natives sent out to collect the flies had no difficulty in capturing large quantities within a short distance of the laboratory, the magistrate who was stationed there in 1905 told me that he only occasionally saw tsetse flies at that time.

Again, it has been suggested that the big game might be only one of the reservoirs of the disease, and that the infection might equally well be harboured by the small vermin.

It must be remembered, however, that the small vermin is to a considerable extent nocturnal in its habits; and although *Glossina morsitans* does occasionally bite at night, especially when the moon is full, yet nobody who has lived in "fly" areas can have any doubt that this is exceptional, and that for practical purposes the fly feeds in the daytime only. Dr. Kinghorn and I examined a large number of small vermin—rats, mice, wild rabbits, etc.—without finding a single instance of natural infection with a pathogenic trypanosome. Furthermore, it must be remarked that there is no evidence to show that the small vermin are tolerant of the human trypanosome, as are the big game. In those which we infected experimentally the disease ran an acute course and the animals died. If this be the case with the majority of the small vermin they cannot have the same significance as reservoirs of the virus as have the big game, which can probably harbour the parasite for long periods without exhibiting signs of disease.

The theory has been advanced that cattle and other domestic stock might harbour the human parasite for considerable periods without detriment to health. This, however, is not the case. We found that the trypanosome rapidly kills horses, cattle, donkeys, goats, and dogs. Moreover, even if the human parasite failed to kill domestic stock, these would still die from the ordinary cattle trypanosomes, such as *T. pecorum*, *T. nanum*, and *T. vivax*, with which the wild *Glossina morsitans* is heavily infected; so that it is obvious that domestic stock cannot have the same significance as a reservoir of the infection as the antelope, which are tolerant of the trypanosomes pathogenic to man and domestic stock.

The hypothesis that human beings can harbour the parasites for long periods without detriment to health, and thus act as reservoirs of the virus in the same way as the game, is one which I cannot support. Amongst the cases discovered by us several—presumably recently infected—presented practically no symptoms, the only indication of the disease being the presence of trypanosomes in the blood, yet without exception they were all dead within six months.

We return, therefore, to the original position. The game is the natural reservoir of the infection; the part of the tsetse fly, *Glossina morsitans*, is to transfer the virus from the big game to man and his flocks and herds. At the present state of our knowledge we are unable to attack successfully the tsetse fly, nor, unfortunately, is there any prospect of our being able to do so in the near future.

Whether anything would be gained in this direction by slaughtering the big game is still a moot point, therefore I will not consider this side of the question, but advocate the advisability of attempting to drive back the game from inhabited regions solely because the game are the reservoir of the infection.

I might point out here that whether or not other flies, besides *Glossina morsitans*, be proved eventually to transmit the human trypanosome, does not affect the question, further than that, if this be shown to be the case, it simply emphasizes the difficulty of successfully attacking the transmitting agents and demonstrates clearly that if anything is to be done it must be in the direction of destroying the reservoir from which *Glossina morsitans* and the other (hypothetical) vectors derive their infection.

It has been asserted that the proposal to slaughter all game animals in an infected district is unsound in principle, because the game when harried would betake itself to places difficult of access to man or scatter in small herds or in pairs or singly over wide areas, and that should this occur it is highly probable that it might be followed by tsetse, thus spreading the danger of infection to wide areas now free from game and fly.

To such criticism as this it is not difficult to reply. If the game when harassed betook itself to places difficult of access to man, surely this is exactly what is desired. In such places it would no longer be a menace to civilization.

Regarding the second alternative, that the hunted game might scatter into small herds or in pairs and be followed by the tsetse fly, thus spreading the infection over large districts, the obvious rejoinder is that should this occur the game must be destroyed in the new areas, provided these happen to be inhabited regions. Such a contingency is, however, very unlikely, as it is very questionable if small herds of hunted game scattering over wide areas would cause the tsetse fly to migrate with them.

The Colonial Secretary has said that "To talk of the extermination of the wild fauna of a subcontinent is to talk wild nonsense." This is perfectly true, but it is no reason why the game in a definite limited area should not be destroyed. It was further stated that an attempt made in Nyasaland to get the game in a certain area killed off was, after twelve months, unsuccessful, though the natives

were encouraged to shoot. This, again, is no argument against the policy suggested, but merely a confession that the experiment was not efficiently performed.

Such experiments as these are unsatisfactory and do not yield any definite results. For reliable information to be obtained it is necessary that the work should be done in a scientific manner, and on a sufficiently large scale in some particular district. A locality which is fairly well populated, and which contains plenty of tsetse fly and game should be chosen. An exact census of the population should be made, and the proportion suffering from trypanosomiasis determined. The same must be done in the case of the domestic animals, if such exist. An index of the percentage of infective tsetse fly must be ascertained. This is most important, as it gives a definite idea of the potential danger of the district. Finally, the game must be completely eradicated, and at the same time the percentage infected with the human and cattle trypanosomes determined, and when once the game has been driven out it must be kept back by vigorous action and not allowed to return. After an interval of some years the population, domestic stock, and tsetse fly must again be carefully examined. Then we should be in a position to decide definitely whether or not driving the wild fauna back from the sites of human habitations in fly areas would be advantageous on a general scale in tropical Africa. As such an experiment as this would take some years to accomplish, I consider that for the present the game laws should be removed in fly areas, and that Europeans and natives should be allowed to kill what they like, especially in the inhabited portions of these areas.

Recently sleeping sickness was discovered in a certain isolated fly belt—the Sebungwe district of Southern Rhodesia—which is roughly about 2,500 square miles in size. On a hurried survey some twelve cases of the disease were found, including one European. The human trypanosome was also found in certain of the antelope in the area. It has been said that the proper way to deal with the situation is to remove the entire population from the fly belt. This at first sight appears an admirable plan, and will certainly save the inhabitants. Is there, however, not another side to the question? When the population is withdrawn there will be established all the conditions of a game reserve. The wild animals will increase and gradually spread and probably with them the fly, until the invasion of surrounding districts demands further removals. Surely it is preferable to make a reasonable attempt to stamp out the disease than at the first alarm to abandon such regions to the game and fly without even attempting to dispute the ground with them.

It is for such reasons as these that I venture to suggest the desirability of undertaking the decisive experiment which I have outlined, as it is only by this means that the exact knowledge necessary for our future guidance can be acquired.

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A BILL, making insurance against disease and invalidity compulsory in Belgium, was presented to the Chamber some time ago by the Government. The organization of the service will be confided to the mutual aid societies, to recognized federations, and to mutualist local committees. The State and the employers will contribute, but in a less proportion than those directly interested. The insured will have a right to medical treatment and to a supply of such medicines as may be required; they will also receive one franc a day, starting from the tenth day of illness onwards. Permanent invalids will be pensioned. The maternity benefit will be thirty francs. The annual tax for non-members of mutual aid societies will be eighteen francs, of which twelve will be allocated for disease, and six for invalidity.

PRELIMINARY REPORT ON AN OUTBREAK OF FEBRILE DISEASE IN AN INDUSTRIAL SCHOOL.

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THE cases which form the subject of this communication occurred during the years 1910 and 1911 in St. Thomas's Industrial School, Preston. I have not been able, so far, to complete the investigation to my satisfaction, and hence have delayed recording the cases. At the time when the epidemic terminated I had the strong suspicion that there was a "carrier" in the school. There has not been a chance of clearing up this point since 1911, but on reading the full and careful report by Drs. McGowan and McNeil on a somewhat similar epidemic which occurred in Tranent Industrial School, and was referred to in a note in the BRITISH MEDICAL JOURNAL of May 31st, p. 1178, I thought I might place my experience of an unusual series of cases before the profession.

Clinical Description.

The clinical description of the epidemic in the Preston school tallies exactly with that in the Tranent and other schools, noted in the report mentioned. To put it as briefly as possible, we had to deal with an illness of sudden onset, marked by headache, epigastric pain, vomiting in mild cases of undigested food, but in severe cases of large quantities of a distinctly greenish or yellowish fluid, accompanied in some cases by intense prostration, a temperature varying from normal to 105°, by herpes labialis in a certain proportion, and in 5 cases by definite consolidation at the base of the lungs. In the very worst cases there was a true septicaemic condition. Three of the boys were found dead in bed, having retired apparently well the previous evening; four others died within twenty-four hours of the onset of headache or vomiting. It will be noticed that only five of my cases developed any definite pneumonic condition, although over 80 boys attacked were carefully examined by me.

Post-mortem Findings.

At the first *post-mortem* examination made the thyroid and thymus were greatly enlarged, the spleen was slightly enlarged but otherwise normal, and Peyer's patches and mesenteric glands were very pronounced. The lungs were congested but crepitant. Dr. Delépine examined the stomach contents for traces of poison, with a negative result. In the second *post-mortem* examination a similar enlargement of the lymphoid structures was found, with marked congestion at the bases of both lungs, but no actual hepatization. At the third and fourth *post-mortem* examinations similar appearances were found. In neither case could I definitely make up my mind that the lungs showed anything beyond hypostatic congestion, nor were the thyroid and thymus so much enlarged as in the first two cases.

I was able to satisfy the coroner's jury in each case by declaring that I considered the deaths due to a pneumococcal or influenzal poison epidemic in the school, and acting virulently on boys suffering from status lymphaticus. I did not feel satisfied, though I thought I was on pretty good ground, as I knew that three of my teachers—the late Sir William Gairdner, the late Dr. Finlayson, and the late Professor Gemmell—had reported on what seemed to be an exactly similar series of cases occurring in a school in Glasgow in 1888, when the diagnoses severally made were malignant influenza, abortive pneumonia, and pneumonia complicating some unknown intoxication.

At the next *post-mortem* examination the findings were so like what I have seen in an early case of enteric fever that I thought it probable there might be some intestinal poison at work. The Peyer's patches and solitary follicles were distinctly congested and enlarged, and the corresponding mesenteric glands varied from the size of a bean to the size of a walnut and were much congested. The spleen was enlarged and soft. The thymus was only slightly enlarged. The thyroid was enlarged and dotted with pin-point abscesses. Loops of bile, punctures from the spleen, scrapings from the mesenteric glands and

Peyer's patches and from the pin-point abscesses in the thyroid were inoculated into bouillon. I consulted my friend, Dr. J. J. Buchan, M.O.H. St. Helens, who suggested to me that I should try the agglutinating reactions of serum from boys suffering from the disease with the different strains of intestinal bacilli which he had in his laboratory. Dr. Buchan has my sincerest thanks, as, but for the use of his laboratory and materials and the fact that he corroborated and checked my results, I could not have continued the investigations.

Bacteriological Results.

From the spleen, Peyer's patches, mesenteric glands, abscesses in the thyroid, and from the faeces in two cases, a bacillus was obtained which was actively motile. The growth on agar gave the usual *coli*-typhoid appearance. The bacillus was negative to Gram, did not produce indol, did not clot litmus milk. On Conradi-Drigalski plates bluish colonies, much smaller than the red colonies of *Bacillus coli* used as a control, and on picric acid green and McConkey's bile salt media colonies quite distinct from the *Bacillus coli* colonies were grown.

Agglutination Results.

Briefly, the *Bacillus coli*, typhoid bacillus, and Gaertner's bacillus were excluded at once, as even after two hours in a dilution of 1 to 50 there was no agglutination with blood taken from boys who were ill. The laboratory paratyphoid B and the laboratory aertrycke bacillus agglutinated the same serum in dilutions of 1 to 50 almost immediately and 1 to 100 in a few minutes. Some of the specimens taken from boys who had recovered from the disease for some time agglutinated the laboratory paratyphoid B bacillus, but not the laboratory aertrycke bacillus. The bacillus cultivated from the *post-mortem* examination was negative to a case of typhoid, but agglutinated each blood that was positive to the laboratory paratyphoid B.

Whether the bacillus isolated is actually the paratyphoid B or not, there can be no doubt it is closely related to that organism, as it gave similar cultural reactions, and agglutinated the same bloods. Each boy who was ill was positive both to the paratyphoid B and the bacillus isolated. Some of the boys who had not been ill gave negative reactions to both, though some gave positive reactions. Some of these latter admitted having had "the headache," which even in the case of boys who had been evidently affected was almost all that could be obtained in the way of complaint.

The question of the presence of a "carrier" in the school was considered seriously, but the demands of a general practice debarred me from systematically testing the blood of each boy. However, the last *post-mortem* examination I did inclined me more than ever to this idea, though I was not, unfortunately, able to make any further progress in the investigation. The liver in this case was a beautiful specimen of hobnailed cirrhosis. The boy was aged 12, there was no history or suspicion of syphilis. He died after a few hours' illness, but had had an attack of great severity about six months before. It seemed quite a plausible inference that there had been some chronic absorption from the bowel producing cirrhosis of the liver.

I think, then, that this epidemic deserves to be placed alongside of the other recorded epidemics. The descriptions of these resemble the Preston epidemic just as closely as they resemble the Tranent one; and the mere fact that in this latter epidemic the infective agent was the pneumococcus, in view of the atypical form of pneumonia that is present in these epidemics, does not warrant the conclusion that all such outbreaks are due to abortive pneumonia. The diagnosis of the late Professor Gemmell showed his superlative powers as a clinician when he wrote in 1888, "They seemed all to be victims of the same poison, although, in some, owing probably to personal idiosyncrasy, aided by favourable atmospheric conditions, it issued in pneumonia."

The epidemic at Birkdale Farm School, reported on by Dr. Coupland, though diagnosed as pneumonia, was not due to the pneumococcus. It is over two years since I read the report, and I am writing from memory, but I think the organism was said to be a motile bacillus. In this connexion it is interesting to recall the epidemic of pneumonia in Middlesbrough in 1888, investigated by Dr. Ballard and Professor Klein. There were over 1,600 cases, with more than 300 deaths. According to Professor Klein, the germ at work was a motile bacillus, and from the description of the cultural appearances of this organism on gelatine, given in the *Treatise on Hygiene*, by Stevenson and Murphy, the appearances resembled more those of the *coli*-typhoid group than the pneumococcus. It is also of interest to recall the observation that bacon bought in the infected districts gave rise to pneumonia in mice fed upon it. Considering that paratyphoid B belongs to the meat-poisoning group, this fact may be of importance. However, I made nothing of my investigations in this direction in the Preston cases.

In view of the positive finding of the pneumococcus in the Tranent epidemic and the positive finding of a bacillus of the *coli*-typhoid group in the Preston epidemic, I think the search for a solution of the problem may well continue. It is only too likely that a chance for further investigation will present itself before long, considering the histories of the industrial schools of the country. I am, however, not sure that this type of disease is limited to the inmates of these institutions, as I cannot help being struck with the frequency with which at coroners' inquiries, deaths from acute conditions of a few hours' duration are returned as deaths from acute pneumonia. It seems to me possible that there are toxaemias of alimentary origin masquerading up and down the country as malignant influenza, gastric influenza, and fulminant pneumonia, in addition to the undoubted diseases of these names. It is in the hope that some one with sufficient time, and the fortune to meet cases of this class, may still further investigate the subject, and to keep the question of the naming of the disease open till we have further knowledge, that I have written this communication.

NOTES OF A CASE OF "NODULAR LEUKAEMIA."

BY

ROBERT REID, M.D.,

PHYSICIAN TO THE THRONE HOSPITALS, BELFAST;

WILLIAM CALWELL, M.D.,

PHYSICIAN TO THE ROYAL VICTORIA HOSPITAL AND CONSULTING PHYSICIAN TO THE THRONE CONSUMPTIVE HOSPITAL;

AND

W. W. D. THOMSON, M.B.,

RIDDEL DEMONSTRATOR OF PATHOLOGY, QUEEN'S UNIVERSITY, BELFAST.

G. M., a boy aged 10, was seen by Dr. Reid, on November 2nd, 1912, for pain in his right hip and leg. As no improvement followed rest in bed, Dr. Reid admitted him to the Throne Children's Hospital on November 13th. The pain closely resembled that of right hip-joint disease, and splints were applied; but the pain soon developed in the other side. On December 8th enlarged glands were found below the left lower jaw; some teeth were loose and were removed. Within a few days a swelling appeared above the right zygoma, and subsequently above the left, and later in the groins. He was rapidly losing flesh, but there were as yet no head symptoms.

On December 15th there was loss of vision in the right eye and later in the left, and slight proptosis. Some spinal fluid was withdrawn by Mr. Stevenson and examined by Dr. Thomson. On December 27th he was seen also by Dr. Calwell and Dr. Thomson, and at this date his condition was much worse; he was only partially conscious; he did what he was told if he was given time; his answers were fairly intelligent, but delayed, and were chiefly in monosyllables; there were large symmetrical swellings above each zygoma, and the proptosis was more marked; there were sordes on the lips; the abdomen was full and tender; it was examined with difficulty, but no enlargement of liver, spleen, or kidney was detected; all the lymphatic glands—cervical, axillary, inguinal—were enlarged and shotty; on the skin generally, and on that of the abdomen in particular, there were palpable minute millet-seed-like nodules; there was some head retraction, well-marked Kernig's sign, and priapism; he was now blind, and later became deaf; there was also paralysis of

both lower extremities with anaesthesia, and unconscious action of both bowels and bladder; flexion of legs caused pain; one optic disc presented some neuritis, the other was clear. There was also epistaxis a day or so before death. The temperature varied from 98° F. to 100° F., but on December 26th it began to be sharply intermittent, and reached 104° F. on January 1st; it was subnormal before death, which took place on January 3rd. Unfortunately a photograph was not obtained nor a *post-mortem* examination allowed.

Report by Dr. Thomson.

The spinal fluid sent to me was so haemorrhagic that a cytological examination was of no value; a slight growth on agar was due to a staphylococcus, and as it was not again discovered it was probably a contamination.

At a subsequent examination of the patient on December 27th the following results were obtained:

Blood.—The coagulability was delayed; the serum showed distinct lipaemia; fat was extracted from it.

Red cells	2,800,000 per c.mm.
Haemoglobin	55 per cent.
Colour index	1 (practically).
White cells	5,640 per c.mm.
Differential count:	
Polymorphonuclears... ...	12 per cent.
Large lymphocytes	49 ,,
Small lymphocytes	17 ,,
Transitional	12 ,,
Myelocytes	10 ,,

There was no poikilocytosis; no nucleated reds were found and no chromatophilia.

A blood culture gave a negative result.

Urine.—No albumen, no sugar, no Bence-Jones's substance. Nucleo-proteins were present in rather increased amount.

Lumbar Puncture (made by Dr. Thomson).—The fluid escaped at high pressure and again seemed almost like pure blood; fat was again present in large amount in the serum; a culture gave a negative result.

It was intended to confirm or modify these results of the physical examination and of the blood count by repeated similar investigations, but the rapid course of the disease prevented the accomplishment.

Remarks by Dr. Calwell.

Although these notes are not complete, we thought the case of sufficient importance to warrant us in putting on record such facts as we have. There seems to be little doubt that it falls under the broad category of "nodular leukaemia," as described by Dr. Gordon Ward in the Section of Medicine of the Royal Society of Medicine in 1912, and in type it most closely resembles "chloroma." The zygomatous swellings were marked; the early pain in the hip and leg, which finally developed into paraplegia, was presumably due to analogous deposit in the spinal column, and such a deposit would no doubt account for the deeply blood-stained fluid removed on both the occasions of lumbar puncture. The blindness, the deafness, the priapism, are all classical symptoms; the rapid course of the affection was in keeping with the diagnosis.

The result of the blood examination shows a remarkable smallness of white blood count; whether this paucity would have been found to be a constant factor on further examination cannot be argued; such a number has been found, and enormous rises and falls in the white blood count have been put on record by most authorities; in one case it is given as 800 per c.mm. The differential count is also interesting; the great increase of large lymphocytes and the presence of a considerable number of myelocytes is characteristic. Gulland and others say that the blood picture in leukaemia is by no means constant; so that the blood examination in this case confirms what has been already so often noticed, that neither in number or character of the red, nor in differential count of the white, have we a definite and final arbiter in the subclassification. In this case, however, the blood count sharply differentiates it from the series of cases given by Robert Hutchison, in the first number of the *Quarterly Journal of Medicine*, of suprarenal sarcoma in children with metastases in the skull, in which temporal swellings were present; but a blood count showed a simple marked secondary anaemia. Frew, however, in a later number endeavours to prove that such cases come under the term "carcinoma," and gives details of cases in which the differential count shows a very marked disturbance; such cases would widen the boundaries still further.

The usual conception of "leukaemia" rests on the differential count of the white corpuscles; in the acute form there is an excess of lymphocytes and profound constitutional disturbance, and often an early fatal issue; in the chronic or marrow form, symptoms are frequently delayed till late in the course of the disease, and we find an excess of myelocytes. In his paper Dr. Gordon Ward describes "nodular leukaemia" as embracing all cases of leukaemia in which nodules of leukaemic growth have been found in various parts of the body, and have been obvious to sight or inference during life. It is purely a clinical term. He mentions a great variety of titles, such as mycosis fungoides, chloroma, Mikulicz's disease, and others, and points out that lately facts have come to light which, apparently, link the affections described under these names closely together: cases of mycosis fungoides occur with a blood picture of leukaemia; cases of leukaemia occur in which nodules indistinguishable from those of mycosis fungoides have developed; similar nodules are found in chloroma; the green colour of chloroma may be present only in a minority of skull tumours, and may be found in the glands and marrow of leukaemia in which there were no tumours.

Whether we can rope in all the affections enumerated by Dr. Gordon Ward, and also by Dr. Treadgold,[1] is a matter for future investigation. We can distinguish the leukaemias from even extreme cases of leucocytosis, and also from cases of pure sarcomatosis; the blood picture, however, varies, not only in different patients, but also in the same patient from time to time; probably these differences are due to the type of cell becoming more and more primitive. "The variety and severity of the affection," says Treadgold, "varies with the part of the haemopoietic apparatus affected, with the intensity of the stimulus, and with the ability of the organism to withstand it." And one has thorough sympathy with him in his complaint regarding the cumbrous terminology that is suggested in each new article.

It might be considered more correct to use the term "infiltrating leukaemia" and not "nodular"; the collections of cells are not always circumscribed; oedematous infiltration may be found about the face, neck, scalp, and this may at times have a greenish colour; definite nodules of fair consistency are most common in the bones, especially those of the skull, but have also been found in the pelvis and vertebral column; they may occur also in the skin and subcutaneous tissue—indeed, wherever lymphoid tissue is found. The nodules vary in size, from that of a pin's head to that of a fist. They do not occur in the epidermis, but may ulcerate through it. The colour varies from that of the surrounding skin to yellow, red, purple, greenish. Minute nodules are found on the gums and in the submucous tissue of the alimentary tract. Parkes Weber points out that the pre-mycotic infiltration of mycosis fungoides may be sufficient to make the skin fall in rolls, and that this affection corresponds to Kaposi's lymphodermia perniciosa.

The more constant employment of the oxydase reaction, as described by Dunn in the April number of the *Quarterly Journal of Medicine*, 1913, may in future prove of service. His conclusions state that the occurrence of a positive indophenol-oxydase reaction in large non-granular cells in acute leukaemia is a certain proof of their myeloid nature, and enables a diagnosis of acute myeloid leukaemia to be readily made from blood examination; but that the reaction is negative in the more embryonic forms of marrow cells; cases of acute myeloid leukaemia may occur, in which the type of blood formation is so embryonic that the oxydase reaction is valueless for differential diagnosis; but even in such cases the histological characters of the large leucocytes may render a diagnosis possible. It seems, however, thus to fail us just where it would have been of great service—namely, the origin of the embryonic type of white cell.

Reference.

[1] *Quarterly Journal of Medicine*, 1908-9.

Surgeon-General George Bidie, C.I.E., Honorary Surgeon to the King and formerly to the Viceroy of India, left personal estate of the total value of £2,943.

A CASE ILLUSTRATING GREAT TENACITY OF LIFE.

By A. TURNBULL, M.B., CH.B.GLASG.,
DEMONSTRATOR OF ANATOMY IN THE UNIVERSITY OF GLASGOW.

THE case of the French Zouave who lived for some time after practically the whole of the head except the brain had been removed by a cannon ball is one of the classical instances of tenacity to life. Weinlechner in 1881 reported that a man had lived and been conscious for twelve hours after a fall and injuries which included fracture of the cervical spine, with laceration of the cord, paralysis (motor and sensory) of all the limbs, rupture of the sternum, bleeding into pericardial and abdominal cavities, and laceration of the spleen. Erichsen (*Lancet*, 1870) reported on a man who, after leaping a distance of 60 ft. down a hoist, lived for ten days, although suffering from (1) fracture of seven ribs; (2) perforation of the apex of the right lung; (3) tearing of the pericardium; (4) complete fracture of first lumbar vertebra; (5) pulverization of the right os calcis.

Mr. D'Arcy Power read a paper in 1890 to the Pathological Society of London, indicating that considerable laceration can take place in the spleen and in the kidney with very slight symptoms, unless a large blood vessel is implicated.

If urgent haemorrhage does not immediately follow injury, the most extreme internal injuries can often be undergone with a minimum manifestation of shock. The following case will bear this statement out, and emphatically illustrates the powers of tenacity of life in the human frame:

P. H., a dock labourer aged 45, was admitted on December 31st, 1909, to the Western Infirmary, Glasgow, about 9 p.m. About noon on the same day he had fallen down the hold of a ship, but details of the accident were not forthcoming. For some time after the accident he remained in a dazed condition. He then recovered sufficiently to walk home, a distance of half a mile at least.

He went to bed, but began to experience increasing pain in the left chest and side, especially over the lower ribs. A doctor was called in, and recommended that he should be conveyed to hospital, but thought so lightly of the condition that he held out hopes of the patient's speedy dismissal. There was some delay in the arrival of an ambulance, and the man was *in extremis* on his arrival in hospital. In the afternoon, according to the statement of the relatives, he had passed "a bowlful" of red blood from the rectum.

On admission no external marks of injury were visible except a cut over and some bruising of the left eye. Yet the patient was suffering from great shock; he was semi-delirious and extremely blanched, the lips and mucous membrane being livid white. The pupils were dilated and equal, and no sign of fracture of the skull could be recognized. If there had been epistaxis it had ceased prior to admission, and there was no bleeding from the ears. There was no marked abdominal distension, but tenderness was elicited on pressure on the abdomen and on the left chest. Some dullness existed in the left iliac and lumbar regions. He could both move his legs and feel, and there were no symptoms of injury to the spinal cord.

The patient rapidly sank into unconsciousness, and died with symptoms pointing to internal haemorrhage about an hour after admission.

Necropsy.

A *post-mortem* examination was made by Dr. Robert Muir, Professor of Pathology in Glasgow University, to whom I am indebted for the following report:

A well-developed muscular man, with rigor mortis still present. There was a fresh ecchymosis of the left eyelids, but no subconjunctival haemorrhage. A small fresh incised wound, 1½ in. long, was found over the left supraorbital ridge. There was no external evidence of injury to trunk.

Head.—A fracture of the frontal bone is found extending down on the left side to the inner end of the supraorbital ridge. This part measures 2½ in., and has a small offshoot on either side. On the base of the skull the fracture is traced along the left orbital plate and across the sella turcica to the right middle fossa, ending just above the base of the petrous bone on the right side. A slight diffuse subarachnoid haemorrhage is present, especially over the posterior part of the right parietal lobe. No gross lesions in brain or pons.

Thorax.—A fracture is found through the first left costal cartilage near the sternum, and some tearing up of the sterno-clavicular ligaments and fibro-plate; no actual dislocation. The second, third, fourth, fifth, and sixth ribs are broken through about their middles. The parietal pleura is torn over the broken ends of the third and fourth ribs, and 6 oz. of blood is found in the left pleural sac. The eleventh rib is fractured towards the exterior end. Both lungs oedematous, otherwise healthy; no perforation of left lung, only slight bruising. Heart fairly normal.

Abdomen.—Two pints of fresh blood are found in the abdominal cavity. The spleen is extensively lacerated. There is much haemorrhage into the connective tissue round the left kidney and suprarenal. The left kidney is markedly crushed and lacerated. The right kidney is uninjured, as also is the liver. The oesophagus, stomach, and intestine are uninjured. No blood in the rectal faeces and no injury to the bladder. No injuries to the bones or column.

This man, therefore, walked half a mile after receiving:

1. A fractured skull.
2. Extensive fractures of the ribs.
3. Pulping of the spleen.
4. Pulping of the kidney and lesions in the vicinity of the solar plexus.

The bowlful of blood had probably been passed by the urethra from the ruptured kidney.

He was a tall and powerful man, but to achieve the above feat showed a retentive tenacity above the ordinary. It is seldom that such an extraordinary case is met with, and therefore it was deemed desirable to report it.

THE INFLUENCE OF MARIENBAD SULPHATE WATER ON ALBUMINURIA.

By MAX PORGES, M.D.,
MARIENBAD.

ALTHOUGH our ideas of the importance of albumen and casts in the urine have materially changed during the past decade, yet their presence must still be considered a fact of pathological moment. We know also that there are a number af pathological states in which the kidneys show a defect of function producing a temporary appearance of albumen and casts.

For many years I have been impressed with the fact that the presence of albumen with or without casts is very constant among the patients who come to Marienbad. The same observation has been published already by Dr. Zörkendörfer, director of the Balneological Institute,[1] who found either albumen or casts in 80 per cent. of his patients. Pflanz,[2] who has published cases that have been for a long time under observation, likewise draws attention to the frequency of this phenomenon.

The patients who are seen in Marienbad may be classed for the most part in four groups: (1) The obese; (2) the arterio-sclerotic; (3) those of the gouty-rheumatic diathesis; and (4) the plethoric.

If we analyse these cases the fact emerges that it is in the class of plethorics, and more particularly in those affected with plethora abdominalis, that albuminuria and casts make their appearance in the largest percentage. The arthritic and the gouty appear to be also subject to this kind of albuminuria.

Furthermore we have observed that this form of albuminuria with casts is very favourably influenced by the use of sulphate waters. In those cases in which there was well-established chronic nephritis, with rise in blood pressure, uraemic symptoms, and cardiac hypertrophy, it was scarcely possible to point to any favourable influence; on the other hand, we must be especially careful to avoid overburdening the heart by the use of mineral waters. But when the albuminuria is a symptom of disturbance in renal circulation, the unloading of the abdominal vessels will manifestly exercise a favourable influence on the nephritis, and consequently on the albuminuria.

In these cases it is generally a question of individuals who lead a sedentary life, are frequently overfed, often give the impression that their abdominal circulation is disturbed, and frequently suffer from haemorrhoids. There is often also constipation; nevertheless this is certainly not the reason for the albuminuria, as one could assume it *a priori* to be a symptom of enteric auto-intoxication.[3] Indeed, in a whole series of these cases not only is there no constipation, but rather frequent evacuation of stools, and even diarrhoea, existing as a symptom of intestinal catarrh due to this stasis. These patients generally exhibit a much distended abdomen, with symptoms of meteorism; the diaphragm is raised, and there is the characteristic displacement in the area of cardiac dullness described by Schütz.[4] The subjective symptoms consist in a feeling of plethora after meals, severe flatulence, and

a slight dyspnoea on exertion. The quantities of albumen vary between mere traces and 0.5 per cent., and the cylinders from two to fifteen in a specimen.

After using sulphate water for three or four weeks both the albumen and the cylinders disappear completely, and at the same time the symptoms of plethora are removed. The course is an equally favourable one in the case of a combination of arthritis and gout with abdominal plethora. If the patient becomes exposed to the old injurious influences after the albuminuria has gone, there is a fresh onset, after some time, of the excretion of albumen and cylinders, but this promptly disappears if the sulphate water be taken afresh. I have had this typical condition under observation in a patient for sixteen years, without so far any permanent mischief resulting to the kidneys.

In spite of the fact that the albuminuria and cylindruria taken by themselves in subjects of plethora do not, in my opinion, represent any serious pathological factor, it is nevertheless important to abolish the abdominal circulatory disturbance in good time by the aid of sulphate waters, as permanent mischief to the kidneys is certainly likely to result from the onset of injurious influences coming from some other quarter.

REFERENCES.

[1] *Wiener klinische Wochenschrift*, 1911, No. 5. [2] Ibid., 1911, No. 10. [3] Kohler, *Wiener klinische Wochenschrift*, 1898; Wallenstein, *Zeitschrift für klinische Medicin*, Band 58. [4] Schütz, *Prager med. Wochenschrift*, 1912, No. 24.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THREE CASES OF ECLAMPSIA.

CASE I.—In June, 1906, I was called at 9 p.m. to Mrs. L., aged 39, about two miles in the country, for her fourth confinement. On arrival I found the child (a small girl, about eight and a half months) born, and the afterbirth just come away. There was no trouble with the labour. On putting the binder on, I was struck with the swelling of the legs, which seemed more than is frequently found in hard-working multipara. She told me they had been big for some time. She had had three natural confinements previously and three miscarriages. She had diarrhoea all the day the baby was born.

Next morning she complained of feeling sick and not sleeping. The oedema of the legs was less, but the face looked puffy. She had passed a fair amount of urine. The husband came to me in the evening and said she was better, but feeling sick still. I gave her a mixture with some bromide. I was called at 5 a.m. and found her unconscious, face flushed and puffy, pulse 120 and bounding. She had had fits at 9 p.m., 2 a.m., and 5 a.m. I gave her some chloroform and gr. ¼ of morphine, which quieted her. I left about an hour later, but was called again almost at once to hear that she had had another very bad fit. I gave gr. ¼ morphine, which caused a severe fit. I also gave 20 grains of chloral and potassium bromide by the rectum and drew off some urine, which was nearly solid with albumen. She had four fits during the day, and could not be roused at all. She had a succession of fits from 1.30 a.m. to 2.30 a.m., gradually became weaker, and died at 1 p.m.

CASE II.—I was called to a primipara, aged 24, at 7 a.m. on February 27th, 1909. She had fits at 6 a.m., 6.30, 7, 7.30, 7.45, 8.15, 11.20, 11.45, and 2.30. I gave her morphine gr. ¼ at once. At 9 a.m., under chloroform, I dilated the os with Hegar's dilators, and put in a Barnes's bag. At noon I removed the bag, under chloroform, got my hand in the vagina, and dilated the os with the fingers. I then passed a sound, punctured the membranes, seized a leg, and delivered. The baby weighed 3½ lb., and did not live long. At 3 p.m. I gave her gr. iij of calomel and ♏ j of croton oil. She had severe fits at 5 p.m. and 7 p.m., when I again gave morphine gr. ¼. She had a good night and no more fits. Next day she passed water freely, and gradually convalesced.

CASE III.—The patient was a primipara, aged 26, living about four miles away over the downs, to which I could only walk as there is no road. The confinement—on February 8th, 1913—was normal. Low forceps were used and a few whiffs of chloroform given. This was at 10 a.m. I was called back at 2 p.m. and found the patient quite unconscious. From her mother's description she had evidently had a fit. I gave her morphine gr. ¼, and injected two pints of saline under the breasts; her pulse was 120. Next morning she was in the same condition except that she was paralysed down the left side. What little urine was in the bladder was full of albumen. She gradually became more feeble, and died early the next morning. The mother told me that her daughter had been quite well whilst carrying but her feet had been slightly swollen.

It used to be taught that eclampsia coming on after labour was usually mild and the patient mostly recovered. With me the opposite has been the case. Possibly in a hospital, with all the latest treatment at hand, they might have recovered, but I am rather doubtful of it. It is very difficult to have to treat a serious case several miles from home over the downs with only the next-door neighbour as midwife.

C. B. GERVIS,
Seaford. M.D.Brux., M.R.C.S.Eng., L.R.C.P.Lond.

APPENDICITIS COMPLICATING EXTRAUTERINE PREGNANCY.

ON September 19th, 1912, I was called to see a married woman, aged 23, complaining of pain and swelling in the left iliac region, which two days previously had been sufficiently acute to make her faint. She looked pale; temperature normal, pulse 102, respirations 18 per minute. Great tenderness and a distinct swelling in the left iliac region fully an inch above Poupart's ligament. Menstruation had been regular, but at her usual period three weeks before it had been scant, and she had continued to see a little every day. Micturition had been more frequent and accompanied by pain, as was also every movement of the bowels. The breasts were fuller than usual, and a drop of clear fluid could easily be expressed from the nipple.

The previous history showed that the pain had existed for at least twelve months, lasting a few days at a time and then disappearing for some weeks, but she was always conscious of discomfort in that region. This was aggravated by taking food and when the bowels were moved. She had lost flesh. Vaginal examination revealed a large firm swelling in Douglas's pouch, extending into the left broad ligament, with great tenderness in that region. An early abortion was diagnosed, and the pain and swelling on the left side regarded as inflammatory.

She was kept in bed, and the pain became easier and the metrorrhagia lessened; but on September 24th she had another attack of severe pain, and when I saw her next morning the pulse was 120 per minute, temperature subnormal, and the discharge profuse and offensive. The following day the uterus was curetted under an anaesthetic. No membrane was seen, but the discharge ceased. The pain and swelling, however, persisted, and four days after the curetting milk could be expressed from the breasts. A diagnosis of extrauterine pregnancy was then finally adopted. Hence on October 3rd I opened the abdomen through the inner border of the left rectus and found in the swelling not only the expected sac, but also the appendix and a loop of small bowel, these both being inflamed. There was also a large clot of blood. I completed the operation by removing the sac, the left Fallopian tube, the appendix, and the clot, and by stitching up the loop of bowel, which had been slightly torn in separating it. The patient made an uneventful recovery.

What had happened was that an old-standing appendicitis (the appendix extending to the left side) had set up an inflammation and formed adhesions round the left broad ligament. An extrauterine pregnancy had then taken place in the Fallopian tube on the left side, and had ruptured about six weeks, causing the collapse and swelling from the resultant haemorrhage, which was limited by the adhesions formed as a result of the appendicitis.

The condition of the tissue, especially the friability of the broad ligament, added to the difficulty of the operation, more particularly with regard to the vessels. The sickness (which resembled the sickness of pregnancy after the

curetting, and persisted until the second operation) disappeared immediately afterwards, as did also the milk from the breasts.

Dr. Findlay examined the case and gave the anaesthetic on both occasions at the patient's home.

ROBERT STEWART, L.R.C.P. and S., D.P.H.

Nelson, Lancashire.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

TAUNTON AND SOMERSET HOSPITAL.

A CASE OF CARCINOMA OF THE DESCENDING COLON IN A MAN AGED 27.

(By CHAS. FARRANT, Surgeon to the Hospital.)

W. C. S., a baker by trade, and a heavy cider drinker, was first seen by Dr. Alcock, of Creech St. Michael, on February 7th, complaining of pains in the stomach and sickness—chiefly in the morning—and loss of appetite. The bowels were not confined.

He improved under a mixture containing bismuth and soda until February 16th, when he complained of a return of the pains, which were severe, he said, all day. He vomited milk, but retained beef-tea and broth. His tongue was very dirty. There was some slight abdominal tenderness and a little distension. His temperature was normal. The bowels acted at 10 p.m. He had a bad night, with pain and sickness, and on the following morning his tongue was dirty, and the distension had increased. He was given an enema which brought away a few scybala and much flatus; this was followed by great relief. On February 18th and 19th he was better; there was not so much distension, and not so much vomiting.

On February 20th he was admitted to hospital on Dr. Alcock's advice. He vomited some green mucus, which had no faecal smell. He did not look ill; the tongue was dry, and the abdomen moderately distended. There was no tenderness or rigidity. Repeated enemata brought away some scybala and much flatus, and the distension was diminished.

For the next few days he remained very much the same. The bowels were kept open with enemata, and there was no increase of distension.

On February 24th, as there was no improvement in his condition, he was anaesthetized and examined with the sigmoidoscope, but nothing was found.

The abdomen was then opened to the left of the middle line by an incision about 4 in. long, with its centre below the umbilicus. A constriction was found in the descending colon. The wound was enlarged, and an attempt made to bring the affected gut outside, when unfortunately it burst just above the constriction, causing an escape of faeces. The hole was quickly clamped and everything mopped clean. The mesentery was then perforated and two pairs of intestinal clamps applied above and below the growth, which was then removed. An end-to-end anastomosis was made and the abdomen closed,

The patient left the table in a very feeble state, and, never rallying from the operation, died three hours after.

The growth was flat, about the size of a florin, with a depressed centre and thickened rolled edges. A piece was removed and examined by the Clinical Research Association, which reported as follows:

> This growth is a columnar-celled carcinoma composed of very irregular alveoli lined by proliferating columnar epithelium. These are infiltrating the submucous and muscle coats, and contrast very clearly with the normal mucous membrane.

ON May 6th Dr. Woodrow Wilson, President of the United States of America, received a representative joint delegation from the American Medical Association and a Committee on the Conservation of Health of the American Academy of Sciences, which urged the expediency of the establishment of a Cabinet department of public health. The delegation consisted of Professor Irving Fisher, Dr. A. Jacobi, Dr. G. H. Simmons, Dr. Harvey W. Wyley, Dr. Favill, and Dr. John B. Murphy.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

AT a meeting on June 5th, Dr. AMAND ROUTH, President, in the chair, Dr. R. H. PARAMORE, in a paper on the *Intra-abdominal pressure in pregnancy*, said that his measurement of the pressure in the rectum in 24 cases of pregnancy showed that such pressure increased in pregnancy. This was the case whether the patient was standing or lying. It had been thought by those who had previously investigated the pressure in the rectum that this increase was due to an increase in the visceral weight, and that the pressure above the pregnant uterus was not increased. Hörmann, who made many investigations in all sorts of cases, came to this opinion. That authority's conclusion was, however, untenable, since the rectal pressure did not vary merely with increase of visceral weight, nor, indeed, with increase of visceral volume. The speaker, from a consideration of the intra-abdominal pressure in the non-pregnant, held that the visceral weight played some part in the production of the pressure, but that the compression of the visceral mass caused by the concerted reactions of the abdominal wall, thoracic diaphragm, and pelvic floor was much more important. That this compression was greater in pregnant than in non-pregnant women was shown by the change in musculature. It was in the well-developed women who became pregnant that higher pressure values were obtained, and it was in these that the toxaemia of pregnancy was so liable to occur. Dr. GRIFFITH said he was satisfied that Dr. Paramore had proved that intra-abdominal pressure was increased in pregnancy with primigravidae. But he had offered no evidence in the case of multigravidae with lax abdominal walls, and in them it was highly improbable that there was any similar increase except that directly due to the increased weight of the uterus and its contents. The author appeared to think that there was something wonderful about the ascent of the uterus, but he (the speaker) did not think it differed from ascent of the bladder due to distension—that is, the base of the organ remained at the same level. The PRESIDENT did not think that Dr. Paramore had sufficiently proved his first point to advance his main theory that the toxaemias of pregnancy were due to exaggerated increase of intra-abdominal pressure. The preliminary point now brought forward, that the increase of intra-abdominal pressure observed by him and others in pregnancy was due to the increased tone or tonic contractions of the muscles of the abdominal wall and thoracic diaphragm when at rest, had not been proved by him. Mr. GLENDINING said that the only reliable method of estimating intra-abdominal pressure was by a manometer introduced into the peritoneal cavity; the author had measured the intravisceral pressure, which was not at all the same thing. Dr. EDEN said that although the author's conclusions were not in themselves unreasonable, his paper failed to carry conviction because it consisted of too little fact and too much theory. The absence of control observations on non-pregnant women, and upon other common forms of abdominal distension such as ovarian and fibroid tumours, greatly weakened the case. Again, the conclusions he drew from the association of muscularity and corpulency—namely, that the abdominal muscles became hypertrophied as the result of an increase of intra-abdominal fat, did not appear sound; it was quite feasible that these persons were unusually muscular before they became corpulent. The author would find it very difficult to establish a mechanical theory of toxaemia, in view of the careful scientific work of recent years which pointed so strongly to biochemical causes.

SECTION OF LARYNGOLOGY.

AT a meeting on June 6th, Mr. HERBERT TILLEY, President, in the chair, the following were among the exhibits: The PRESIDENT: A case shown in illustration of the effect of time in obliterating extensive frontal scars. Dr. LAMBERT LACK: A *Nasal osteoma* recurrent in the region above the inferior turbinal of a woman aged 31. Nine

years ago a large osteoma had been ablated by the curette. Mr. H. J. DAVIS: Notes of a case of *Cavernous thrombosis* following tonsillitis in a boy aged 10 which terminated fatally in eighteen days. Antistreptococcus serum was injected on the ninth day, and only *Staphylococcus albus* resulted from a blood cultivation. The cavernous symptoms were definite on the fourteenth day. Infection had probably taken place by the facial vein. Incisions and doses of liq. ammon. fort.—5 minims in water every two hours—were of no avail, though such treatment diminished the tendency to thrombosis. The tonsillitis was on the left side, and the thrombosis symptoms were on this side only. Mr. O'MALLEY regarded the sphenoidal venous system as the route of infection, and in this Sir STCLAIR THOMSON concurred, adducing the evidence of sphenoidal sinus cases. Dr. FITZGERALD POWELL also quoted instances of the extension of thrombosis to the cavernous sinus along the petrosal sinus in petrous necrosis. Dr. JOBSON HORNE: A man aged 36 with a *Prominent superior ventricular band* concealing the vocal cord, and raised the question whether this was due to early tuberculosis of the laryngeal sac or a deformity. Examination of the sputum and chest were negative. Sir STCLAIR THOMSON considered the larynx to be free from disease. Dr. DAN MCKENZIE regarded the appearance as due to a prominent superior band, while in Dr. WILLIAM HILL'S opinion the sac was affected. Dr. DAN MCKENZIE: A case of *Sinusitis exulcerans* of the frontal sinus. In the first operation, which was directed to relieve the pus tension, in stripping up the frontal periosteum the elevator passed through the soft bone sinus and posterior wall through the dura, and inflicted a 3 mm. wound. The anterior wall was removed and the dural wound opened and a gauze drain inserted. As progress was good, six weeks later an attempt was made, after a modified Killian operation, to establish an infundibulum, which caused great reaction and necessitated a return to drainage through the skin incision. Subsequently the removal of a track leading to the optic foramen and softened bone in the outer angle resulted in healing. Dr. DAN MCKENZIE recorded a death after *Tonsillotomy* in a boy aged 9 who had had subacute middle-ear catarrh. Three days after the operation an incision over the oedematous neck allowed fetid pus to be delivered by Hilton's method for the deeper planes. Two days later pneumonic symptoms appeared, and the patient died. The organisms obtained from the pleural and cervical cavities were similar to those indigenous in the mouth. The teeth were sound, but the usual precaution of using a lysol mouth wash had been omitted. The case appeared to be a septicaemia from mouth infection. The primary infection was probably pneumococcal.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on June 6th, Dr. G. P. SHUTER, President, in the chair, Mr. T. JEFFERSON FAULDER, in a paper on *Enucleation of the tonsils*, said that he had ascertained that at least 40,000 operations for tonsils and adenoids were performed in the London hospitals alone during the year 1909, and it was therefore important to have an exact appreciation of the indications for operation and the best method of procedure. He had come to the conclusion that if it was found necessary to interfere with the tonsil surgically, it should in all, or nearly all, cases be completely removed. By complete removal he meant removal of the faucial part of the tonsil with its capsule, the lingual prolongation not being interfered with. Perhaps one of the most urgent reasons in support of his proposition was the fact that under previous conditions repeated operations were necessary. He was called to operate upon many cases where two, three, and even four operations had already been performed, and to his mind this constituted one of the mort serious indictments of all against partial removal of a condemned tonsil. Partial removal was liable to set up recurrent tonsillitis and rapidly recurring hypertrophy in patients who had never suffered from sore throat before, and it was the recognition of this very fact which led to the evolution of the various methods of enucleation. With regard to the method best adapted for carrying out removal of the tonsil, it must be observed that the surgeon's object in using the guillotine was always to remove as much of the tonsil as possible. In using the guillotine in the original way it happened not uncommonly that so much tonsil was removed as to amount to enucleation. For this result, however, a very special kind of tonsil was essential—namely, a tonsil pedunculated, projecting, and not at all embedded—one with a capsular area very much less than that of the free surface, a variety relatively uncommon. But enucleation of embedded tonsils could be carried out with the guillotine as well as by any other method. All methods aiming at complete removal, whether by volsellum and forceps, wire snare, scissors, periosteal elevator, blunt knife or guillotine, were dissection methods, and he maintained that dissection by the guillotine had several advantages of its own. It took no longer to remove completely both tonsils by this method than it did to remove pieces of them. Mr. Faulder then demonstrated the principle of the method of operating, introduced by Sluder, with the aid of a phantom. Objections to total removal with reference to the hypothetical internal secretion of the tonsil were next dealt with, and the question of the protective value of a diseased tonsil appeared to have much the same academic value. He could not help thinking that this theory of protection arose from the appearance of the hypertrophied tonsils projecting in the narrow fauces like fortified Gibraltars, but he had come to the conclusion that they more resembled Scylla and Charybdis. Though the tonsils might act as filters they very easily became choked filters, a danger to sanitation. Finally he took up the question of post-operative bleeding. He was satisfied that the bleeding during and after the operation under consideration was very much less than that after tonsillotomy with a sharp instrument, and that patients lost less blood from enucleation by this method than by any other. Secondary haemorrhage from the third to the fifth day had occurred, but was excessively rare. As occasional cases of bleeding occurred whatever operation was performed it was necessary to be prepared for them, and his observations pointed to the adenoids being the source of trouble much more frequently than the tonsils. A firm pad of gauze damped with adrenalin was usually sufficient if held in position for a few minutes. The tonsil clamps shown were most efficient, although uncomfortable. Metal clip sutures might be used for clipping the pillars of the fauces together or for clipping the pillars to a roll of gauze placed in the tonsil cavity. What he had sought to do in his paper was to press for careful selection of cases, but at the same time for more thorough treatment. The PRESIDENT said Sluder's method was a less serious procedure than dissection, and appeared to achieve equally satisfactory results in most cases, but where it might be necessary to remove the whole tonsil, as in the case of diphtheria carriers, a dissecting operation was indicated. Dr. H. J. DAVIS strongly recommended Sluder's operation as performed with a blunt-bladed tonsillectome, and showed that surgeon's instruments presented to him by the inventor. They were far and away the best of the many instruments he had used for enucleating tonsils. Dr. M. E. LEICESTER agreed with Mr. Faulder that in operating on children no special instrument was required so long as the one selected was the right size, but in adults, where previous tonsillotomy had resulted in repeated attacks of tonsillitis, the tissues were thick and tough, and required a specially adapted instrument. Mr. O. L. ADDISON saw no reason for leaving any part of the tonsil, and thought the only satisfactory way in the majority of cases was to remove the entire tonsil with its capsule and lingual prolongation by the blunt dissection method originally introduced by Mr. Waugh. Mr. H. TYRRELL GRAY agreed with Mr. Faulder that complete removal of a diseased tonsil was essential, but enucleation with a guillotine lacked precision, and any method which failed to remove the lingual prolongation was unsound. None of the recent innovations on Waugh's method of blunt dissection appeared adequate. Mr. J. F. O'MALLEY recorded his high appreciation of Waugh's operation, but did not consider it essential, in the majority of cases, to remove the process of lymphoid tissue which connected the tonsil with the tongue, and did not like the depth of anaesthesia required in that operation. Mr. T. JEFFERSON FAULDER, in his reply to comments, mentioned that the

percentage of successful cases depended to some extent upon the selection, but he agreed with those speakers who put it at not less than 90 per cent.

EDINBURGH OBSTETRICAL SOCIETY.

At a meeting on June 11th, Dr. Haig Ferguson in the chair, Dr. Berry Hart discussed the *Pressure experienced by the fetus in utero*, referring especially to the work of Murk Jansen on achondroplasia, who believed that the shortening of the four limbs and of the basi cranii in this condition was due to extra local pressure from the amniotic fluid or the wall of the amnion. The speaker reasoned that, in addition to the liquor amnii, there was the intra-abdominal pressure, and the pressure exerted on the fetus must be uniform and equable. It was impossible to see how local pressure could have any influence in preventing growth in a symmetrical way. The explanation was to be found in the discovery that the bones affected in achondroplasia largely depended for their growth during fetal life upon endochondral ossification, the cause of the deficient growth being a premature arrest or absence of this process. The bony skeleton consisted of three great sections—the bones developed in early endochondral ossification, those developed in late endochondral ossification, and those developing in membrane. This division suggested the existence of Mendelian unit characters concerned in the formation of the skeleton. These, according to Weismann, would reside in the zygote as determinants, and, according to the author, achondroplasia corresponds to a loss of a growth factor for the bones developing in early endochondral ossification. This loss occurred with the extrusion of the polar bodies at fertilization and gave a variation analogous to the mutation of De Vries. Two rare specimens of *Hydatid mole in utero* were shown, the first by Dr. Haig Ferguson. The patient, 49 years old, had been married for eight years, and had had three abortions previously. She missed two periods, and on November 27th, 1912, commenced to bleed, this continuing to the operation on December 22nd. When seen then there was severe anaemia, breathlessness, and an abdominal swelling extending as far as the umbilicus. The diagnosis lay between a fibroid with pregnancy, placenta praevia, and hydatid mole. In view of the uncertain diagnosis and the danger which forcible dilatation of a rigid cervix in an exhausted woman would mean, hysterectomy was decided upon. There was free fluid in the abdomen, possibly indicating erosion of the uterine wall, and this, taken with the age of the patient, determined the author to perform supravaginal hysterectomy. On opening the abdomen 2 quarts of fluid escaped. Recovery was good. The second specimen, shown by Dr. J. W. Ballantyne, was obtained *post mortem* from a woman who died of haemorrhage immediately after reaching hospital. She was 47 years old and was three months pregnant. The uterus was enlarged to the size of a seven months pregnancy. Dr. James Young described the pathological features of the two cases. In the first case the wall of the uterus was about one-third of an inch thick throughout. There was no evidence of erosion of the uterine muscle of a malignant nature. In front the uterine cavity was seen and intervening between it and the hydatid mole there was a fibrinous layer—the decidua reflexa—that is, the mole was situated entirely within the mucosa of the uterus, the bleeding coming through the thin reflexa. Microscopically, appearances similar to those usually present in regions of chorionic activity were seen. The second specimen showed appearances like those seen in the above. In it the decidua reflexa was better preserved, although the hydatid mole was larger and in it definite decidual cells were seen.

WARWICK AND LEAMINGTON MEDICAL SOCIETY.

At a meeting on June 6th, Dr. Arnold Morris in the chair, Mr. Bernard Rice in opening a discussion on *Appendicitis* gave an historical account of the disease. The first recorded case was in 1750, and from that time its increase had been gradual, but during the last decade had without doubt become much more frequent. He was at a loss to account for this, but inclined to look with favour on the influenzal theory and that connected with the use of enamelled saucepans. In diagnosis it was important to bear in mind the similarity of symptoms sometimes found in cases of movable kidney and also ovarian disease. The condition of the pulse was the safest guide. In regard to treatment, he agreed that all cases of diagnosed appendicitis required operation, and generally immediate operation. On the other hand he deprecated hard and fast rules, and called to mind cases in which he had regretted immediate operative interference, whilst he could not recollect any case of his in which waiting for a few hours under strict observation had been at all prejudicial to his patient's interest.

Reviews.

BIOCHEMISTRY.

In a small volume of some 400 pages Professor Carl Oppenheimer[1] has endeavoured to place before the student, and in particular the practitioner, the present position of biochemistry, and has succeeded in producing a most useful book for those who have not the opportunity or leisure for consulting the longer works and ever-growing literature on this most important subject. He has omitted all detailed description of the elementary substances and analytical composition of the body and also all methods, and has thus made room for the latest phases of knowledge in regard to those many great problems of biochemistry which so closely affect the nutrition of the body and the pathology and treatment of disease. In dealing with carbohydrates the author, using a simile suggested by Bernard, happily compares the glycogen dépôt of the body with the daily deposits of cash which are paid in and out of a bank, while the fat dépôts, mobilized with greater difficulty, are comparable to the paper securities which have to be realized before they can be used. The carbohydrates of the body can be utilized for the production of some, although not very much, energy at times of oxygen want, being then broken down into lactic acid. Neither protein nor fat can be so used, and the body does everything to conserve a store of glycogen against such need. In the chapter on ferments we find fibrin ferment still holds its own, but a note is added in which the modern work is mentioned whereby doubt is thrown on the ferment nature of coagulation of the blood which is ascribed to a precipitative change occurring in the colloidal blood proteins. Discussing the theory of muscle work the author puts forward the hypothesis of Zuntz that the contractile muscle element (sarcous element) explodes a molecule of foodstuff, and so produces in a confined space a high temperature, for example, 2,000° C. While this is almost instantly reduced again to a low temperature by the surrounding fluid, it suffices to produce an osmotic change in the muscle element which causes the entry of fluid and the swelling and shortening of the element. Thus the muscle is compared to an internal combustion engine.

Mr. Sidney Cole has brought out the third edition of his excellent laboratory book on *Practical Physiological Chemistry*.[2] Every exercise in this book has been worked through by the author, and the instructions are so given, and notes added, that the student who cares can reach and understand the stated results. Mr. Cole deals with his subject in the spirit of modern chemical science, explains on the ionic hypothesis the falling out of precipitates in colloidal solution such as the proteins form, gives the proper physical and chemical ideas concerning the reaction of the body fluids, and sets forth the recent improved methods of identifying and estimating the quantities of important physiological substances. Thus, in the chapter on the urine we find Folin's micro-chemical methods of estimating total nitrogen, ammonia, urea and urea acid, and Benedict's methods of estimating urea. In the estimation of total nitrogen by Folin's micro-chemical method a small volume of

[1] *Grundriss der Biochemie.* By Professor Carl Oppenheimer. Leipzig: G. Thieme. 1912 (Post 8vo, pp. 407. 9s.)

[2] *Practical Physiological Chemistry.* By Sidney W. Cole, M.A. Third edition. Cambridge: W. Heffer and Sons, Ltd. 1913. (Demy 8vo, pp. 240; figs. 13. 7s. 6d. net.)

urine is decomposed by sulphuric acid as in Kjeldahl's method; the ammonia is drawn over into acid and the solution treated with Nessler's reagent; the amount of ammonia is determined colorimetrically (using a Dubosq colorimeter) by comparison with a standard solution of ammonium sulphate simultaneously Nesslerized. In estimating urea the urine is treated with potassium acetate and acetic acid and boiled. The boiling point of the mixture is about 155° C., and at this temperature the urea is rapidly hydrolyzed to CO_2 and ammonia; caustic potash is added, and the ammonia aspirated into acid, and the determination proceeds as above. In estimating uric acid, Folin's uric acid reagent is used; this becomes coloured blue, and is compared colorimetrically with a standard solution of uric acid similarly treated. Mr. Cole says these methods of Folin are reliable, and may be quickly performed with but small amount of apparatus. He urges their clinical use and importance. The hypobromite method of estimating urea is too inaccurate to be of much value. In dealing with the acidity of gastric juice the author points out that the estimation of free HCl is practically that of the concentration of hydrogen ions in the gastric contents. HCl is very freely dissociated into H and Cl ions in such dilutions as those found in the stomach. But weak acids, as lactic and butyric, are only slightly dissociated. The addition of protein to a solution of HCl decreases the concentration of H ions, owing to the formation of a compound that only dissociates to a relatively small extent. The estimation of the free HCl is best done by the electrical method. The use of indicators is not advised. According to the latest researches it is certain that even Toepper's reagent (dimethylamido-arobenzene) reacts with an excess of butyric and lactic acids, and also with HCl in combination with protein. The simplest clinical method that gives results at all comparable with the electrical method is that of titrating with standard NaOH until no reaction for free HCl is obtained with Gunsberg's reagent. This method, however, is rather tedious.

CLINICAL MEDICINE.

IT is not often that the opportunity presents itself of reviewing such a work as *Clinical Medicine*,[3] by Drs. JUDSON BURY and RAMSBOTTOM, the last edition of which was issued (by Dr. Bury) something like thirteen years ago. When the important additions which have been made to the means of studying the manifestations of disease are remembered, the thought occurs that probably the work which appeared in its first and second editions under the name of Dr. Judson Bury alone would on this occasion present but little semblance to its predecessors. Fortunately for the modern student of medicine, it will be found, however, that whilst no pains have been spared to adjust the subject matter of the former editions to present-day knowledge, the principles which guided Dr. Judson Bury in the former editions have not been departed from. The salient feature of this guide to the study of clinical medicine is the graphic presentation to the student of the almost endless objective and subjective manifestations which are discoverable at the bedside. Numerous illustrations of objective signs will be found scattered through the work; their faithfulness is, as a rule, remarkable, though it must be admitted that a few are so crude that it would be well to replace them by others more in keeping which are so excellent (for example, Figs. 2, 12, 30, and 265). Besides pointing out with such success the objective manifestation of disease, the authors have contrived to write a book which is most readable; it is no mere piece of scissors and paste compilation, and the reader need fear no forbidding tables; or if he does find a few tables, he will also discover that their severity has been toned down by admirably written descriptions. The authors have called to their assistance three other workers in spinal subjects—Drs. Barclay, Wild, and Loveday—who have made themselves responsible for additions or revisions of sections dealing with Roentgen rays, diseases of the skin and its appendages, and the examination of the blood; indeed, the chapter dealing with the radiographic investigations contains one of the best accounts of the application of x rays to clinical medicine which a student could read. Favourable comment must also be passed on the section dealing with the examination of the digestive system and abdominal organs, and were we asked for pages which would exemplify the admirable principles on which the book has been written we would refer to p. 314 and 315, where the authors continue in moderate space to give an excellent differential diagnosis of the causes of ascites. It might be expected that the thoroughness of the revision of this edition might best be estimated by a study of the chapter dealing with the examination of the nervous system. It will not be found wanting, for most clearly described will be found those newer conceptions of the course of sensations—paths which we owe to Dr. Heard and his co-workers. We cannot close the volume without expressing gratitude to the authors for a presentation of their subject which is at once most pleasurable and instructive not only to the early student, who will find within its covers reliable guidance, but also to the senior student and practitioner who wishes to keep abreast in matters connected with clinical medicine.

The treatise by Dr. EMILE SERGENT[4] on the elementary technics of clinical medicine and semeiology is primarily intended for students as an introductory to clinical work. The omission of propaedeutics from the curriculum in the Medical School of Paris has induced Dr. Sergent to organize, with the help of his house-physicians, a series of tutorial classes in order to initiate the students into the usual methods of examining patients; for however well stocked the memory of the novice may be with the systematic descriptions of diseases, he is necessarily embarrassed in the presence of a given case in his endeavour to make a diagnosis, unless he has previously been taught how to collect and to appreciate the requisite data for this purpose. This enterprise has proved so satisfactory to his pupils that at their special request Dr. Sergent has published this book to enable them to refer to the inculcated lessons whenever they deem it necessary. The manual, which is very complete, contains short accounts of the symptoms of most forms of internal diseases with their significance and their conditional diagnostic imports. It also contains instructions for the making of chemical, microscopic, and radiological investigations more immediately suitable for the bedside. All statements in it are concise and easily intelligible; there are also 173 figures in the text and two coloured plates. We have no doubt that the book amply fulfils the purpose for which it is designed and will be most useful not only for students but also for the busy practitioner.

A GERMAN PRACTICE OF MEDICINE.

WE have already reviewed the first volume of Dr. KINDBORG's practice of medicine[5] in the issue of December 11th, 1911, of this JOURNAL. The plan adopted in that volume has been continued in the second, and we are pleased to say with as signal success. Wherever medicine is brought into close contact with the modern developments of the ancillary sciences, whether chemical, physical, anatomical, or physiological, the writer intercalates passages which briefly explain what those developments are, so that the reader is spared the time and trouble of referring to text-books on these subjects. Nothing is taken for granted, and it is assumed that the reader is desirous of knowing not only what it is that medicine borrows from other sciences, but what are the reasons for this adoption. The author has succeeded in the present volume as completely as in the first. Occasionally this plan leads to rather curious results; for example, whilst nearly four pages are given to the study of acute rheumatism, two pages are devoted to the chemical study of salicylates. The present volume concerns itself with those diseases which are con-

[3] *Clinical Medicine.* By Judson S. Bury, M.D.Lond., F.R.C.P., B.Sc.Vict., Consulting Physician to the Manchester Royal Infirmary; Examiner in Medicine to the Royal College of Physicians, London; formerly Professor of Clinical Medicine in the University of Manchester, and Albert Ramsbottom, M.D., M.R.C.P., Assistant Physician to the Royal Infirmary, Manchester. Third edition. London: Charles Griffin and Co., Ltd. 1912. (Med. 8vo, pp. 550; illustrations 305, plates 10. 17s. 6d. net.)

[4] *Technique clinique médicale et sémiologie élémentaires.* By Dr. Emile Sergent. Paris: A. Maloine. 1913. (Cr. 8vo, pp. 780; 173 figures, 2 planches en couleurs. Fr.13.)

[5] *Theorie und Praxis der Inneren Medizin.* Ein Lehrbuch für Studierende und Aerzte. Von Dr. Erich Kindborg in Bonn. Zweiter Band. Berlin: S. Karger. 1912. (Imp. 8vo, pp. 647; 74 illustrations, Mk.10.)

sidered to be due to errors of metabolism, to diseases of the organs of locomotion and to those of the digestive organs. As one would expect, Dr. Kindborg is able to give very good accounts of the first and last of these disorders, the study of which has been so much advanced by Continental workers. He is not without a sense of humour, and has his gibe on page 325 about the specialist and the use of the "stomach pump." It is also clear that Dr. Kindborg throughout his volume justifies his concluding sentence in the introduction, in which he says he has endeavoured to give the reader not only an account of the facts and theories of medicine, but also to express what are his own individual views and experiences. This can be seen when, in his remarks upon the meaning of catalepsy on p. 225, "flexibilitas cerea" is shown to be a condition of "transcortical motor apraxia" homologous to "transcortical motor aphasia." Dr. Kindborg gives an excellent account of the physiology and anatomy of muscles, and refers to the newer teaching of Weichardt as to the existence of "fatigue toxins" which operate like bacterial ones, even to the extent of leading possibly to the development of "fatigue antitoxins." Were we asked to state what is the specially interesting as apart from the merely instructive feature of this book, we would say it was the "asides" which Dr. Kindborg so adroitly introduces into what is a readable account of the accepted ideas of medicine. We have referred to some, but on page 142 is another especially interesting: here it will be found that he tilts at the views of Kionka, Kobert, and others according to which the good effects of colchicum in gout are attributed to the stimulant action of the drug upon the liver activity. With Umber and Schittenhelm and Brugsch he considers that colchicum has no "specific" effect—has no power, that is, of acting at the seat of the disorder upon the actual cause of the disorder; it is merely an "anaesthetic." The wonder is that Dr. Kindborg cannot see that probably salicylates act in much the same way, that is, as anaesthetics or anodynes in rheumatic fever. We cannot close the review without a word of praise for the excellent diet charts, for the tables contrasting the types of diabetes, for others showing the different reactions of the urine to 10 per cent. ferric chloride solution under varying circumstances, for the calorie values of common foods, and for the excellent accounts of radium and the physiology of the intestinal tract with special reference to the ferments.

PROSTITUTION.

THE recent output of literature devoted to the discussion of sex problems has gained dimensions which are alarming enough to the busy man who wishes to keep his knowledge of these and kindred subjects up to date. A few decades earlier the purely scientific aspect of these problems was much neglected; and what many medical men of a past generation would scarcely touch, is now carefully dissected, analysed, labelled, and docketed. The fearless discussion of matters hitherto largely shrouded in mystery has done much to put them on a more healthy and physiological basis; but there is also a common tendency at present to burden them with a mass of tedious and nauseous detail scarcely germane to their fundamental principles. This criticism is applicable to the voluminous work by Dr. IWAN BLOCH[6] on the subject of prostitution. The first volume alone runs to 870 pages, and deals mainly with the historical aspect of the subject. In his introduction Dr. Bloch urges the importance of regarding prostitution as a central factor from which other problems of sex radiate, and on which they largely depend. The eradication of prostitution is not, he claims, merely of interest in its bearing on venereal disease; it is also of vast ethical importance. Since the publication of Parent-Duchâtelet in 1836 it has not, he states, been scientifically analysed; and he holds that the time is now ripe for an objective and systematic scrutiny of a state of affairs the continuance of which is challenged. Among the modern movements which may tend to check prostitution must, he says, be included socialism and the emancipation of women. The latter, according to the author, may succeed in demonstrating that prostitution is not the "necessary evil" it has so long been called. He reviews in detail the history of prostitution among savage tribes, among the Grecians and Romans, and during the Middle Ages among the followers of Christianity and Mohammedanism. An interesting account is given of the laws enacted by Solon, whose aims were the preservation of the sanctity of marriage and the free indulgence of the passions out of wedlock. Solon, in other words, legalized prostitution to preserve the sanctity of marriage. This attitude was, in the author's opinion, erroneous; but it has been an unconscionably long time in dying. As might be expected, Martial and Juvenal are largely drawn on by the author, whose classical quotations are numerous. The amours of Clodia-Lesbia and of Valeria Messalina, the wife of the Emperor Claudius, are cited as classical examples of nymphomania and greed leading to scarcely credible excesses. Dr. Bloch's book should prove of value as a work of reference; but its very bulk and encyclopaedic dimensions reduce its usefulness to the average reader.

[6] *Die Prostitution.* Von Dr. Med. Iwan Bloch. Vol. i. Berlin: Louis Marcus. 1912. (Roy. 8vo, pp. 906. Mk. 10.)

CONVERGENCE IN EVOLUTION.

PROFESSOR ARTHUR WILLEY is so well known to all zoologists that any contribution from his pen is always eagerly anticipated. His last book, *Convergence in Evolution*,[7] will therefore be widely read.

The subject of convergence is one which has received much attention in recent years. It is also a subject of no little complexity. Formerly structural resemblances were regarded as indicative of phylogenetic affinity. Now, however, we know that such resemblances may occur as the result of similar factors operating on organisms quite unrelated to one another, that is to say, they are convergent. In the words of the author, the term "convergence" is applied to resemblances "which are not derived by inheritance from common ancestors, but which result from independent functional adaptation to similar ends."

The realization of the facts of convergence has shown that the difficulties in establishing genetic affinities are very much greater than used to be supposed. This has led to a division of morphology into homogenetic or normal morphology and convergent morphology; and comparative anatomists of to-day will doubtless all agree with Professor Willey in regarding each division as of equal importance. He considers convergence in its broadest aspects, and rather from the physiological standpoint. The earlier chapters focus ideas which have probably been at the back of many men's minds without having been definitely formulated. The author shows how animals may be roughly classified into the Phanerozoa and the Cryptozoa, the exposed and the concealed animals; or into the Eleutherozoa and the Statozoa, the free and the fixed. Such divisions are, of course, rough and imperfect, nevertheless the mere suggestion of such a classification is of considerable interest, as it draws attention to certain characters and habits common to animals belonging to widely separated groups.

All such characteristics the author rightly includes under the term "convergent"—a term too often restricted to internal anatomical structures, and for which Lankester has suggested the name "Homoplasy." The various aspects of mimicry, warning colorations, and social instincts are likewise so regarded. The "tropisms" or tendencies to reaction are referred to in relation to the causation of convergence, but only in a tentative manner, as must necessarily be the case in the present inadequate state of our knowledge.

The book is very interesting and very suggestive. If it perhaps leaves a vague feeling of insufficiency, the cause is to be found rather in the lack of sufficient knowledge to enable us to crystallize our ideas than to the author's ability to give them lucid expression. The publication of the *Origin of Species* necessarily gave an enormous impetus to detailed anatomical investigation; with this zoologists are now becoming somewhat surfeited. We require to know more of the why and the wherefore; to correlate and to generalize. It is to such a book as

[7] *Convergence in Evolution.* By Arthur Willey, D.Sc.Lond., Hon. M.A.Cantab., F.R.S., Strathcona Professor of Zoology in the M'Gill University, Montreal. London: John Murray. 1911. (Demy 8vo, pp. 177. 7s. 6d.)

this that we look for refreshment, stimulation, and suggestion. Its dedication to Sir E. Ray Lankester is most appropriate.

PLANT-GALLS.

THE nature and causation of plant-galls is a subject which has excited the curiosity and aroused the interests of observers of nature from the earliest times. More than one Greek writer referred to them, and many are the superstitions which centre around these pathological growths and still retain their hold among the rural population.

The latest writer upon the subject is Mr. E. W. STANTON, curator of the Educational Museum at Haslemere. The introduction to his book on *British Plant-galls*[8] is written by Sir JONATHAN HUTCHINSON. It is essentially a book of reference, and as such should prove useful to all workers at the subject. More than half the volume is taken up with classification of the plants that may be affected, of the parasites which may attack the various plants, and with a bibliography. The remainder of the text is mainly devoted to somewhat detailed descriptions of the gall and correlated parasites. It is not a book to read, but to refer to. It seems a matter for regret that so little is said about the causation of the galls. It is true that our knowledge is not extensive, but the general reader would be interested in learning something about the ferments which are known to cause galls in certain plants. The information as to the economic aspects of the subject also is scanty, and more details about such subjects as these would undoubtedly have made the book attractive to a wider circle of readers. There are several very good coloured plates, for which Miss Mary K. Spittal is responsible. The descriptions of the plates are all placed at the end of the book. This arrangement is somewhat distracting—the account of the gall is on one page, the corresponding plate in another part, and the description of the plate at the end of the book. If another edition is called for, the suggestion is offered that to place the description on the page facing the plate would be much more comfortable for the reader. While thus criticizing the book, we cannot but add a word of praise for the patient labour which the author has obviously expended upon it.

NOTES ON BOOKS.

AT this time of day no demonstration of the value of the microscope in the daily work of the public analyst and the pharmacist is needed. The microscope will furnish, with the expenditure of a minimum of material and often of a minimum of time, information concerning the substances analysed that cannot be obtained by any other means. There is scarcely a food or drug that cannot be recognized, or an adulterant that cannot be detected, by its help. Mr. GREENISH'S book on *The Microscopical Examination of Foods and Drugs*,[9] of which we welcome a new edition, is so arranged that the student passes gradually from the simpler to the more complex examinations, acquiring as he proceeds a knowledge of the various tests and operations that are in general use. The starches and spores are described first; then follow careful descriptions of the methods of preparation and of the microscopical appearances of the wood fibres, stems, leaves, flowers, bark, seeds, fruits, rhizomes, or roots of such plants as are most likely to be met with by the analyst and the pharmacist. Of the substances which were not described in the first edition we may mention saffron, which is introduced as an example of part of a flower, almond as a type of the oily seeds now much in use as alimentary substances, and fennel fruit as a type of umbelliferous fruits. Liquorice, gentian, and calumba have been added to the section dealing with the roots. The new chapter on the more common adulterants of preserved foods and drugs and the general scheme for the examination of powders are valuable features. The book is clearly written, the type good, and the illustrations, which are, of course, of prime importance in a work of this kind, are excellent and abundant.

Mr. CARL HANSEL'S *Introductory Electricity and Magnetism*[10] is certainly not a book for the easy chair. It is a book for the work bench, to be held in one hand while the other grasps a bar magnet or operates a switch. As a manual for students preparing for elementary examinations in the subject, it is ably and carefully compiled, and we suppose that we ought to be grateful to an author, especially one who can write so clearly and well, for sacrificing his literary conscience by breaking up his pages into regular alternations of exercises, examples, and sets of questions. But even in a class book an occasional excursion into history and theory might be tolerated, and some sort of bibliography would be acceptable to those who, having accomplished this considerable trial flight, have the desire still to soar.

The rapidity with which edition follows edition of professional lexicons is a proof how new methods and new discoveries demand the introduction of new terms, for the days are long past when experts wilfully invented names which sounded learned and really deceived the general public. Dr. JOHN PRICE, the editor of *Hoblyn's Dictionary*,[11] has not overlooked this phenomenon. The book is amongst the best of its class and in form highly convenient, but the editor has to exercise great judgement lest the new editions grow bulky. The original author, in preparing the tenth edition, made the scholarship of his lexicon more uniformly accurate than before, and went so far as to indicate how unclassical and hybrid were such words as "mentagra." "Why not adopt the term *geneiagra*, from γενειον, the chin?" The present editor has retained several philological rebukes of this kind. We may note, by the way, in regard to "the term" in the sentence just quoted, that one of the most distinguished medico-literary censors strongly objects to "term" when applied so as to be clearly synonymous with "name," yet many leading physicians and surgeons never scruple to do this, and the same we see is the case with the compiler and editor of this dictionary. However, whether new words introduced by authorities and specialists be "names" or "terms," dictionaries are sought for in order that those who consult them may find out what the unfamiliar words signify. This edition supplies one want. There are a great many "new terms," owing, as Dr. Price observes in his preface, to recent advances in bacteriological science. He has turned to Muir and Ritchie's textbook for correct definitions, and so has done us good service. Nor need we groan at the perfectly necessary scientific words coined to denominate germs and their vagaries; at the worst, they are far less objectionable than the denomination of new surgical methods by the names of new operators. Following in Hoblyn's footsteps, Dr. Price has not overlooked scholarship, for he has freely consulted Murray's *New English Dictionary*, to which he admits his indebtedness.

The *Leeds Pharmacopoeia*[12] has been drawn up by a committee appointed jointly by the Local Medical and Pharmaceutical Committees under the Insurance Act, with a view to facilitating the ordering and dispensing of medicines. It contains about a hundred formulae for mixtures, lotions, pills, etc. The *British Pharmaceutical Codex* and the pharmacopoeias of the Leeds Public Dispensary and of various hospitals have been largely utilized in compiling it. Special attention is drawn in the preface to the parogens, a class of compounds adopted from the *Codex;* the basis of these is a mixture of paraffin (hard, soft, or liquid, as required) with an ammonia soap, and medicaments such as iodine can be rendered easy of absorption by the skin by exhibiting them in this form. The appearance of these compounds in the *Leeds Pharmacopoeia* is evidence of the intention of the compilers that the saving of time to prescribers and dispensers which the book is intended to effect shall not be gained at the price of neglecting improved forms of medicines.

[8] *British Plant-galls.* By E. W. Stanton, with an introduction by Sir Jonathan Hutchinson and 16 coloured plates by Mark K. Spittal. London: Methuen and Co., Limited. 1912. (Post 8vo, pp. 302; plates 32. 7s. 6d. net.)

[9] *The Microscopical Examination of Foods and Drugs.* By H. G. Greenish, F.I.C., F.L.S. London: J. and A. Churchill. 1910. (Roy. 8vo, pp. 406; illustrations 209. 12s. 6d.)

[10] Heinemann's Science Manual: *Introductory Electricity and Magnetism.* By Carl W. Hansel, B.Sc.(Hon.). London: William Heinemann. 1913. (Crown 8vo. pp. 392; 283 figures. 2s. 6d. net.)

[11] *Hoblyn's Dictionary of Terms used in Medicine and the Collateral Sciences.* Fifteenth edition, revised throughout, with numerous additions. By John A. P. Price, M.D.Oxon., M.B.Lond., Surgeon to the Royal Berks Hospital, late Physician to the Royal Hospital for Children and Women. London: G. Bell and Sons. 1912. (Post 8vo, pp. 888.)

[12] *Pharmacopoeia Leodiensis (The Leeds Pharmacopoeia).* Published jointly by the Leeds Local Medical Committee and the Leeds Local Pharmaceutical Committee. (1s. net.)

MEDICAL AND SURGICAL APPLIANCES.

A Tuberculin Syringe.

Messrs. Burroughs, Wellcome and Co. have recently brought out a syringe which is primarily intended for the administration of tuberculin injections, but could equally well be used for hypodermic medication of any kind. It consists, apart from the needle, of three separate parts—a syringe barrel, a plunger, and a nozzle. All three are of glass, the latter being of blue glass, while the barrel, which holds just 1 c.cm., is marked in red in twentieths of a cubic centimetre. Being of glass the whole is easily sterilizable, while experiment shows that the piston fits the barrel so accurately that leakage does not occur. To this extent this new syringe does not differ from many others of the same order, but nevertheless there is a difference of material interest—namely, the syringe barrel is of such narrow calibre that there is a considerable distance between the graduating lines. This fact, coupled with the difference of colour between plunger and barrel, should make accurate measurement of a dose easy. The syringe, therefore, has definite practical merit.

A Retractor.

Mr. Stanley Boyd, F.R.C.S. (Surgeon to Charing Cross Hospital), writes: The advantage and frequent necessity of dispensing with the hand of assistants is acknowledged. The simple retractor illustrated here has often enabled me to do so with comfort. The Holborn Surgical Instrument Company make it with claws ½ in. and 1 in. deep, the latter for the deeper wounds. With two of the retractors—one holding open the fat and external oblique, the other the internal oblique and transversalis—removal of an appendix by the muscle-splitting incision can be easily carried out.

Hypodermic Medication.

Under the title of "hypotubes," Messrs. Evans, Sons, Lescher, and Webb are now issuing hypodermic solutions and vaccines of various kinds put up in a manner designed to do away with the use of hypodermic syringes. The solution is placed in collapsible tin tubes which end not in a cap but a closed nozzle, which is so shaped as to fit accurately into the neck of a hypodermic needle. To inject the fluid the end of the nozzle is pricked and inserted into the neck of a needle, which in its turn is inserted under the skin; the fluid is then injected by squeezing the tube flat. The end of every nozzle, it is stated, is carefully sterilized, and the tubes are sent out with this nozzle covered by an india-rubber cap, while a suitable pricker and a needle are supplied, already sterilized, in a small glass tube filled with rectified spirit and plugged with a rubber stopper. The needle and pricker are carried in this tube in a metal support, and since their asepticity is maintained by the rectified spirit they can be used as often as desired. The device is certainly ingenious, and there seems no reason why it should not prove effective and gain considerable popularity.

The Chlorometer.

The Rideal-Evans Chlorometer is an ingenious little instrument for detecting and measuring traces of chlorine or other strong oxidizing agents in water. It is intended to be used as an adjunct to the treatment of water or sewage effluent by the chlorine process, in order to ascertain whether sufficient and yet not too much chlorine has been employed, so that a trace, and only a trace, remains in excess. It consists essentially of a primary battery, in which the plates are of copper and platinum and the water to be tested is the fluid of the cell. In such a combination no measurable current is produced unless something is present to combine with the hydrogen which must be set free; a trace of "available" chlorine provides the necessary attraction for the hydrogen and causes a current to be produced, and the amount of current is a measure of the amount of "available" chlorine, while chloride does not interfere. The instrument is made by Messrs. Siemens, Brothers and Co., Ltd. (Woolwich), who also supply a descriptive pamphlet on its applications.

Under the will of the late Mr. John Kinnaird of Birnam, the City and County Infirmary, Perth, and the Northern Infirmary, Perth, each receives a bequest of £1,000, and, subject to certain life interests, are to share the residue of the estate with three other charitable institutions. The personal estate of the testator was sworn at a value of £21,275, in addition to other property.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

The Regulation of Importation into Australia.

The Committee of the House of Commons appointed to inquire into the sale and advertisement of proprietary medicines held its last public sitting on June 12th. It began to take evidence at its meeting on May 9th, 1912.

Evidence was now given by Dr. W. P. Norris, chief medical officer for the Australian Commonwealth in London, and until recently Director of Quarantine and medical adviser under the Commerce Act to the Commonwealth in Australia.

The Chairman (Sir Henry Norman) asked the witness if he would first give a general outline of the reasons which caused the Commonwealth Government to undertake restrictive action in regard to proprietary medicines.

Dr. Norris said that following the inception of the Commonwealth the protection of the public in regard to the sale of secret remedies was discussed in the House, questions were asked by members on various sides of the House, and in the end the general feeling was crystallized in the Commerce Act, 1905. The Act dealt with a large number of matters as regards false trades description, and a special section (15) specifically mentioned articles used for food or drink by man, or used in the preparation of all such articles; medicines for external and internal use; apparel; jewellery; seeds and plants. All the procedure in connexion with proprietary medicines had been the outcome of that section. A power of prohibition of importation under the Customs Act was also operative. The Commerce Act prohibited the importation of any specified goods unless there was applied to them a description of a prescribed character.

The Principles Governing Regulation.

As to the principles upon which the regulations had been enforced, the witness said the question had not been dealt with from the standpoint of the interests of the medical profession, but purely from that of the interests of the public. The following were the considerations the department kept in view:

1. The protection of the person using or obtaining a proprietary medicine from injury, direct or indirect.

2. The protection of the public from injury. There were remedies offered for the cure of communicable disease; these could never be considered only from the standpoint of the person using them; the public interest was paramount.

3. The protection of the person from prejudice as a purchaser. Where it was considered that extravagant value was emphasized in printed matter, that was objected to, so that the public would not be deceived in that respect. If a thing was said to be of enormous value and plainly it was not, objection was made. While remedies put forward for serious diseases were kept chiefly in view, criticism was not limited to those. It was held that the public, necessarily relatively ignorant on such subjects, needed protection from exploitation which might waste their material substance.

4. It was held that the function of medical science and practice was to deal with the morbid condition itself in the light of all the facts of medical science, and on a consideration of the personal factors of the case as distinct from the mere symptoms. A competent diagnosis and estimation of all the facts of the case were essential antecedents to rational treatment.

5. It was a primary principle of medical science that there should be proper and prompt publicity regarding all actual or supposed remedial agents, and that it was wrong to conceal, for purposes of personal gain, the existence of facts regarding such agents. In reply to a question, the witness said this was the view of the medical profession generally, but the Commonwealth authorities might be taken as having endorsed it, having permitted official action to take place on those lines.

6. It was held that in view of the public importance of health and disease, any person engaging in the proprietary medicine trade might reasonably be required by the public to manifest in the descriptions and recommendations of a preparation a knowledge and appreciation of the facts of medical science and practice. This was the sole basis of

the legitimate practice of the healing art, and where it was not manifested there was no reason why the person or his trade should be protected in any way.

7. It was held that all useful remedies, recognized as such, were the product of pharmacological and related research and clinical practice.

The witness mentioned the safeguards which had been adopted by the department, without outside pressure, whereby an aggrieved manufacturer could submit the printing matter in dispute, with samples of the preparation, and the departmental criticism, to an independent public authority. (The authority of a professor of a university or the medical department of the English Local Government Board would be accepted.) This right of a manufacturer had rarely been exercised; manufacturers had fallen into line with the suggestions of the department.

In regard to the alteration of labels some proprietors had been willing, others had been desirous of compromising, and others adopted a defiant attitude until they saw that their goods would be prohibited if they did not give way. As to the possibility of a label being altered after a preparation had been admitted into the Commonwealth, the witness said it was held by some that owing to a defect in the Constitution the Commonwealth Government could not follow up goods inside the Commonwealth; he added that in practice it did not pay the manufacturers to alter the labels of each separate package.

In reply to Sir Philip Magnus, the witness said the law he was describing applied wholly to imported goods. There was an increasing trade in articles manufactured within the Commonwealth, and only in one or two cases did State action appear to be adequate. There was, however, a movement to bring the various States into line, and this had crystallized into legislation in the cases of New South Wales, West Australia, and, he thought, Queensland and Tasmania. The first legislation was that passed by Victoria.

In reply to Mr. Glyn-Jones, the witness said that if a manufacturer could not obtain sanction of his printed matter and sent it apart from the packages to an agent in Australia for the agent to put up the medicine and the labels together, he believed the Commonwealth would have power to stop it.

Mr. Glyn-Jones: Suppose a manufacturer establishes a factory in Australia, can he use the labels that would not be passed at the port of entry?

The Witness: He can; it has been done.

The Censorship of Printed Matter.

The witness proceeded to describe the lines of action taken by the Commonwealth in dealing with proprietary medicines. First, the principle of declaration was applied. In certain cases a special label was required to be placed on the package, or the declaration of specified therapeutic agents was required. The principle of censorship was applied. Suggestions would be made for amendment, or in certain cases prohibition was the action taken. If persons refused to alter the wording they were told that their preparations might be prohibited.

The Chairman: Judging from the evidence we have had, you have required alteration very frequently?

The Witness: Yes, in an enormous number of cases. Nearly all printed matter submitted requires radical alteration.

Continuing, the witness said the principle of the registration of the formula was only operative in West Australia, and perhaps Queensland and Tasmania. The Acts under which this was done were quite recent, and their effect could not yet be estimated. The witness gave instances of the claims in advertising matter that would not be permitted unless satisfactory proof of their bona fides were given—for example, a claim that a remedy was unique; that the maker was the "discoverer" of the remedy; that the remedy was "prepared from a famous doctor's formula." Doctors' testimonials were investigated as far as possible, and testimonials from chemists were objected to. Replying to Mr. Glyn-Jones, the witness said he meant testimonials from analytical chemists or testimonials from pharmacists which involved difficult medical questions; chemists were supposed to have a knowledge of materia medica. Objection was also taken to the growing practice of recommending other preparations by the same firm in the printed matter accompanying a particular preparation. Invitations to correspond with the makers were distinctly not encouraged. All misleading statements were objected to at once, an extravagant misstatement was condemned, but a puff, readily recognizable as such, was tolerated, not approved. Superlatives were objected to, and the department tried as far as it could in fairness to the maker to mitigate the effect on the public of vaunting statements in advertisements. The term "cure" would be objected to.

In reply to a question, the witness said the term "lightning cough cure" would not be accepted, nor would the phrase "the only cure." He had been looking through the shops of London, and he noticed this phrase frequently; in Australia it would not be allowed. The word "the" was objectionable when used in a certain way. The word "specific" and the expression "skin food" were not allowed. Recommendations for the routine use of proprietary medicines were objected to; the department did not think any one should become a medicine drinker. It took this line apart altogether from the question of habit-forming drugs; the unqualified advice to "take one of our pills once a week" would not be approved. The department had taken a strong line on the alcohol question. All claims that alcoholic beverages might have a medicinal value were eliminated. Alcoholic beverages must be sold as such and not as medicines. He did not class medicated wines as beverages; these were scrutinized very carefully. They were looked on with grave suspicion, and it would not be tolerated that they should be recommended for general use. It was held that medicated wines had a distinct tendency to the unconscious establishment of a taste for alcohol. "Guarantees of cure" were objected to, not only on account of the unsoundness of the claim, but because it was found on investigation that very few of the so-called guarantees could be held to be such in law. In the case of a wine containing a coca extract, it was required that it should be made clear on the label or other printed matter that there was a danger of drug-habit-forming.

The department took a particularly strong line in the case of any preparation sold for the treatment of a communicable disease, because there they held that private interest gave place to public interest. With any remedy for gonorrhœa and its local sequelæ a definite statement was required to be placed prominently on the label to the following effect:

Note.—In any case under treatment, if the disease does not yield promptly and completely to treatment, medical assistance should be obtained at once.

The danger of spreading the disease, even after apparent cure, is very great, and a reliable medical opinion as to cure should always be obtained.

In the case of a cure for an infective disease the public danger was required to be pointed out on the label. In some cases preparations such as those he had just mentioned were objected to entirely; the precautions he had described were the least that was required. The witness added that there had been nothing but approval from the public of the regulation of the traffic. The department had not been considered to be acting in a high-handed way, and its relations with the importers themselves had been on the whole friendly. He could not say whether the trade in secret remedies had grown very much recently in Australia; they would naturally be taken somewhat freely owing to the scattered nature of the population, and to the fact that doctors did not dispense to any extent. More proprietary medicines went to Australia from this country than from the United States; they were now arriving from Japan also.

Suggestions for Future Legislation.

The witness proceeded to make suggestions as to future legislation. He would like to see uniform labelling of proprietary medicines in all English-speaking countries, and he regarded this as being likely to be a convenience to the trade as saving it from the necessity of labelling specially for the different countries. There was room in legislation for all the means of dealing with the subject that now operated. The principle of the public declaration of a formula or the presence of active drugs was

useful, but had drawbacks. The public was not necessarily advantaged by the declaration of the formula; it only thought it knew; the lodgement of the formula confidentially with a public authority might be of just as much advantage to the public. Any Act should prohibit the advertising of the fact that a public authority had passed the preparation and pamphlets accompanying. There was certainly room for the protection of the public by the scrutiny and correction of printed matter. There should be frequent addenda to the *Pharmacopœia* in the form of supplementary lists. Unless some good reason were shown he would not allow the well-known drugs to be advertised under different fancy trade names; on the other hand, protection should be afforded to any one who could show that he was the discoverer. Advertisements should be dealt with carefully; the New South Wales Pure Food Law, 1908, gave power to prohibit the advertisement of any article in contravention of a notification of the public department concerned.

The Chairman: I suppose one may fairly sum up the general attitude of the Australian Government by saying it claims nothing but the application of common sense and medical knowledge in dealing with this question?

The Witness: That is so; the work has not been done in the interests of medicine or pharmacists as such, but for the public.

In reply to Sir Philip Magnus, the witness said there was a movement, which was gathering force, to extend to each State the regulative methods applied by the Commonwealth Government to imported proprietary medicines.

Sir Philip Magnus asked if the principle laid down by the witness of competent diagnosis as an essential was fully carried into effect, would it not prevent the sale of any proprietary medicine whatever. The witness replied that it would distinctly limit them.

Sir Philip Magnus: Does the scrutiny of advertisements apply to announcements in the public press as well as to printed matter?

The Witness: The scrutiny does, but unfortunately the censorship does not. We cannot touch the press under the Commonwealth Act, but some of the States are taking the power to do so. I think a weak point of our present machinery is that we cannot follow a medicine into the various States.

Mr. Lawson asked whether the driving force which produced the Acts was enthusiasm for public health so much as fiscal protection. The witness replied that the idea of fiscal protection had nothing to do with the matter. It was not a left-handed method of obtaining fiscal protection. Any growth of proprietary articles manufactured in Australia that might have occurred was entirely unforeseen, and as the Commonwealth was seeking power to control those, it was evidently not in sympathy with such a method of obtaining fiscal protection. He also said that the laws affecting advertising in the different States were not rigidly enforced at present. It would not be right to say the laws had remained largely a dead letter. In New South Wales, where the provisions had been in operation for some time, there had been test cases; elsewhere the laws had only recently been passed, and it would not be fair to judge them.

In reply to Mr. Newton, who asked the size and cost of the department which controlled proprietary medicines under the Commonwealth Government, the witness said that two doctors, himself and a colleague, had done the work of skilled scrutiny. The analytical work had been done as part of the ordinary routine of the Commonwealth laboratories; there was a small clerical staff, and occasionally leading physicians, surgeons, and veterinary officers were consulted. Often as many as twenty or thirty investigations in a week were made.

Mr. Newton: Does any serious delay to commerce occur through the operation of these regulations?

Dr. Norris replied that goods were released at first, even if some amendment was required, unless it was an extreme case where there would be positive danger to the public in admitting the preparation. Ample time was given for correspondence between England and Australia. Less objectionable printed matter was now received from importers; they were beginning to put their houses in order.

Mr. Glyn-Jones: If your principles were put in force to the full extent it would mean the prevention of any proprietary medicine trade at all?

The Witness: This trade does not seem to me to meet any public need so much as to engender by advertisement an unnatural sense of need.

The trade should be prevented if possible?—It should be very rigidly regulated.

Is it not dangerous to place in the hands of two permanent officials the right of prohibiting any particular trade without appeal to an outside body whose decision would be final?—The only prohibitions are in the case of preparations considered positively injurious. These are not made by the officers of the department, but by the Governor-General in Council. The prohibitions are published as Orders in Council.

In reply to further questions, the witness said that when the suggestions for amendment of printed matter made by the department were not at first acceptable to the importer, it was not a matter of compromise. The department insisted on its full requirements; the only option given was in the matter of terminology.

At the conclusion of his examination the witness said he wished to add that, in regard to the suggestion of several witnesses that cancer and consumption "cures" should be prohibited entirely, he would like, in view of their experience in Australia, to extend the list to include cures for tumours of all kinds, epilepsy cures, diabetes cures, and those preparations with a vague description of mental symptoms—hypochondriasis or mental depression.

The Chairman said the Committee was much indebted to Dr. Norris for his extremely valuable evidence.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).

Section of General Pathology.

The president of this section is Professor Shattock. The section will meet in the Royal College of Science.

The first discussion, jointly with the Section of Anatomy, is on the excitatory and connecting muscular system of the heart. The anatomical side will be taken by Professor His, Dr. Josué will speak on localization of function, and Dr. T. Lewis and Dr. Ivy Mackenzie will also contribute to introducing this subject, which has been deeply studied during the last few years.

The pathology of fats and lipoids is another subject on which much work has been done recently. It will be introduced by Dr. Iver Hang of Lund and Dr. Sigmund Fränkel of Vienna, whose views are well known to be divergent.

The third subject, the grafting of normal tissues, will be introduced by Professor Borst and Dr. Burrows; the fourth, the pathology of shock, will be introduced by Dr. Crile and Professor Yandell Henderson; and the last—the effect of radio-active substances on the tissues—will be opened by Dr. Hertwig and Dr. Lazarus-Barlow.

Among the contributors of independent papers are Professors Aschoff, Adami, Warthin, Dr. Charles Singer, Professors Brodie and Mackenzie, and among the subjects so treated are hyperblastosis, tetany, gastric ulcer, the influence of asphyxia on the kidney, and the rigidity of calcified arteries.

Further information can be obtained from Dr. Leonard Dudgeon (acting secretary), St. Thomas's Hospital.

The International Association of Medical Psychology and Psychotherapeutics will hold its annual meeting this year in Vienna on September 18th and 19th, under the presidency of Professor H. Bernheim, of Paris.

A bill has recently been passed by the New York State Legislature and signed by the Governor, which provides that where women are required to undergo physical examination with a view to obtaining employment, such examination shall be made by women doctors.

A syndicate of urology is being formed under the auspices of the *Revue Pratique des Maladies des organes génito-urinaires*, of Lille, and very many doctors from all parts of France have already joined. The head quarters of the syndicate will be in Paris, and its object is to group all practitioners who take an interest in urology, so that they may know each other better and discuss their professional interests.

Nova et Vetera.

EARLY REFERENCES TO TROPICAL MEDICINE.

IN the BRITISH MEDICAL JOURNAL of November 23rd, 1912, we gave an account of an interesting paper by Dr. Charles Singer, which appeared in the *Annals of Tropical Medicine and Parasitology* for May, 1912. A further paper by Dr. Singer on the subject appeared in the October number of the same periodical. In it he deals with the question of yaws and syphilis; some early references to dracontiasis or guinea-worm, and the measures taken in Paris in 1533 to prevent the spread of the plague.

Under the first of these heads Dr. Singer tells us that we owe the first accounts of yaws to the Spanish chroniclers, notably to Fernandez de Oviedo, whose *Natural Hystoria de las Indias* and *Cronica de las Indias* appeared in 1526 and 1547 respectively. He called the disease "bubas." Fuller descriptions are given by André Thevet in his *France Antarctique*, published in Paris in 1558. He calls the disease "pians," and compares it to the syphilis then spreading over Europe. Framboesia is still known in the French Antilles as "pians," which is said to be a native term for strawberry. An anonymous English translation of Thevet's book was published in 1568. Thevet expressed the opinion that "pians" was the result of too much "carnall and fleshely frequentation of man with the woman," and he adds:

> This sicknesse is no other thyng than the pocks that raigneth and hath power over all Europe, specially among the Frenchemen: For of us it is named the Frenche pockes, the whyche disease as the Frenchmen wright, was first taken at a voyage into Naples, and thether it was broughte by the Spanyardes, from the West Indies. For before it was discovered and made subiecte to the Spanyardes there was no mention thereof. It is not onely here in Europe but also in Grecia, in Asia and in Affrica.

This "wylde man's evyll" was conveyed by contagion like syphilis, and the symptoms were similar; further, "if it be waxen old it is harde (and dangerous) to heale: for sometimes it dothe afflict them even to the deathe." The passage quoted above is, Dr. Singer hints, a deliberate perversion of Thevet's statement. This is an amusing illustration of the manner in which writers of the sixteenth century strove to thrust the discredit of having imported syphilis into Europe on some other nationality than their own:

> The final responsibility has been left with the poor Indian inhabitant of the Western Isles, whose exclusion from the republic of letters has prevented his views from reaching us.

What Thevet says is that the points of similarity which he indicates made him "think that the disease was probably no other than that beautiful pox now so rife in Europe which has falsely been fastened on the French nation." One recalls Ancient Pistol's lament that his Doll "is dead i' the spital of malady of France." Thevet, when he speaks of "the pockes . . . taken at a voyage into Naples, and thether it was broughte by the Spanyardes from the West Indies," is referring to the terrible epidemic of syphilis which broke out in Italy in 1493–94, and quickly spread over Europe. Having regard to the origin of this outbreak he thought it would be more reasonable to call it the Spanish disease.

Another argument in favour of the identity of the two diseases is based on the principle *Naturam morbi ostendit curatio*. The disease was cured by drinking a certain decoction of the bark of a tree named by the natives *Hiuourahe*, or guaiacum, which in Europe continued to be used in the treatment of syphilis long after the introduction of mercury as an internal remedy about the middle of the sixteenth century. This argument was used by Oviedo himself. He says:

> I was often amused in Italy by hearing the Italians speak of the "French disease," whilst the French call it the "disease of Naples." But of a truth they would better hit its name off if they called it the disease of the Indies. And that this is the truth may be gathered from this chapter and from many experiments already made with holy wood and guayacan, wherewith especially, better than with any other medicine, this terrible pustulous disease is cured and healed.

The use of guaiacum as a native treatment of yaws survived its use in syphilis. In the eighteenth century it was still commonly administered (as *lignum vitae* or *lignum sanctum*) to infected negroes by planters in the West Indies and other parts of tropical America.

The guinea-worm disease was recognized in very early times, and, according to Dr. Singer, some have even held that the fiery serpents which tormented the children of Israel in the desert were filariae. References to the disease were made by Plutarch, Galen, and Aetius, while Paulus Aegineta devotes a whole chapter to the *Dracunculus*. The Arabian physicians gave full accounts, evidently founded on first-hand knowledge of the disease. In the sixteenth century the Portuguese Jew, Amatus Lusitanus, who was physician to Pope Julius III, had to leave Italy on the death of his protector, and found a refuge in Salonica. There he had the opportunity of observing what he calls the "Turkish disease." He speaks of it as

> a dangerous malady which develops not only in the country from which it takes its name, but also in Egypt, India, and other countries, as the Arabian physicians, especially Avicenna and Avenzoar, do teach, describing it as the Medina vein.

This name, *Vena Medinensis*, is explained by the fact that the disease was said by Avicenna to be commonest at Medina. In respect of treatment Amatus quotes a physician learned in Arabic, as giving the following advice:

> First, the patient ties the end of the vein or nerve round a small piece of wood, and this he winds little by little till the last part of the worm is drawn out. As the structure is often three cubits long, the treatment may last many days before the sufferer is altogether free from pain and inconvenience. Many adopt a cataplasm or cold suffusion, as Soranus, Leonides, and Paulus of Ægina recommend.

On this passage he comments to the following effect:

> Authors are in doubt as to whether this is a nerve, a vein, or a worm. But I have seen the condition with my own eyes, and can bear witness that a thin white worm in many coils was drawn forth . . . and if it should be broken in the process much pain and general disturbance ensues.

Another sixteenth century writer, the Dutch explorer Linschoten, described the disease, and the Latin version of his account of his travels, published in 1599, contains what is believed to be the first representation of the guinea-worm in a printed book. About the middle of the seventeenth century De la Motte Lambert, Bishop of Beirut, made a pastoral tour in the Far East, and a record of his experiences was published. Crossing Persia from Ispahan to the coast he passed through Lar, the capital of Lariston, which is not very far from Bandar Abbas. The water supply, not only of the town but of the country between Lar and Gomeron, was very bad, and was the cause of severe and mortal diseases. To this may, the Bishop says, be

> attributed certain worms of a prodigious length, which engender in the thighs and legs. These worms lie hid, tortuously entwined in the flesh. When detected, a little incision is made to get at the head, this is attached to a piece of stick, and the stick turned a little each day. The worm, which is often six feet long, is thus wound out into a skein. Should it break, the part which remains will cause a dangerous corruption. The way to avoid this worm is to drink only wine, or if water is used, only such as has been carefully filtered through linen.

Dr. Singer mentions another writer, G. H. Velschius, who brought together in a large volume entitled *De Vena Medinensi* every reference he could find to the *Dracunculus*. His imagination seems to have been haunted by the worm, which he saw everywhere—on ancient Roman emblems, in the signs of the Zodiac, in the serpent on many antique coins, in many Greek sculptures, in architectural details, and in drawings of Albrecht Durer and other artists. Dr. Singer says:

> The very emblem of our profession gives him one of his best opportunities, and in the serpents coiling round the staff of Aesculapius he distinguishes a guinea-worm which that distinguished physician has just extracted by entwining it around a piece of wood.

Of the measures taken in Paris to prevent the spread of the plague in 1533 nothing more need be said here than that the general regulations are similar to the Orders conceived and published by the Lord Mayor and Aldermen of the City of London concerning the Infection of the Plague, 1665. These may be found in Defoe's famous *Journal of the Plague Year*.

All who are interested in the history of medicine and in tropical diseases owe a debt of gratitude to Dr. Singer for his researches. He has brought wide learning and tireless industry to the performance of a difficult task. We congratulate him on the result of what has evidently been a labour of love.

FRANZENSBAD.

By a Member of the Franzensbad Association of Medical Men.

Franzensbad is situated in the western extremity of Bohemia, in the vicinity of Carlsbad, on a tableland about 450 metres above sea level, bordered by the Erz Mountains, the Fichtel Mountains, and the Bohemian Forest. It is protected by these mountains from the north and west winds, and has a mild mountain climate, with a medium summer temperature of 59° F. It has twelve mineral springs, a stratum of ferruginous mud, a source of dry carbonic acid gas, and in the near neighbourhood a source rich in radium.

The twelve springs yield in abundance bright and clear water, containing large quantities of carbonic acid gas, of carbonic ferrous-oxide, and of sodium salts in varying quantities. The chief constituents of the waters most used internally for diseases of the stomach and for atony of the bowels, such as the Salzquelle and the Wiesenquelle, are sodium salts; the water of the Franzensquelle, Neuquelle, and Stahlquelle, used for cases of anaemia and weakness, contains more iron. A third group, the Nataliequelle and Stefaniequelle, contain small quantities of salts, among which lithium carbonate is most prominent; they are used in the uric acid diathesis, gout, and chronic kidney trouble.

Mud Baths.

Franzensbad's most powerful remedy is the ferruginous mud. The mud stratum, situated in a basin surrounding the town, measures four kilometres in length, half to one kilometre in breadth, and is two to six metres deep. The mud has been formed by the penetration of the mineral springs into marshy vegetation, impregnating it with iron and alkaline salts. Such iron mineral mud can be produced only in a place which possesses a marsh and chalybeate springs penetrating it. The mud is not suitable for use when fresh. The quantity required must be removed from under the turf, and exposed to the air from autumn till spring, when a chemical change takes place, the insoluble combinations (mostly the sulphate of iron) being changed to soluble sulphates. Franzensbad mud, when ready for use, contains about 10 per cent. iron sulphate and a considerable percentage of sulphuric acid, both of which are strongly stimulating to the skin, act as astringents and tonics, and have at the same time a strong antimycotic quality. The mud is ground in mills, sifted, and mixed with the warmed water of the Franzensbad springs in different proportions to form a paste more or less thick. Its action is due to its mineral ingredients, to its temperature, and to its weight.

The Franzensbad iron-mud baths are used in cases of general weakness and anaemia, of chronic inflammations, mostly of the peritoneum and the sexual organs of women and in sterility, and also in arthritis deformans, gout and chronic rheumatism, neurasthenia, hysteria, neuralgia, and paralysis. The mud is also used for mud-packing and for mud poultices—mostly in such cases as inflammations of the abdomen, rheumatism, arthritis, or neuralgia of the extremities and joints, in which the application of mud is necessary at a higher temperature and for a longer period than would be possible with a complete mud bath.

Carbonic Acid Baths.

These are of two types—mineral and steel baths charged with carbonic acid gas, and dry carbonic acid baths. The water for the baths is prepared in different gradations without the addition of artificial carbonic acid gas, and are used in cardiac disorders, anaemia, weakness, and neurasthenia.

Franzensbad possesses also a gas well, which produces great quantities (12 litres per minute) of nearly pure dry carbonic acid gas; this is conducted to the special gas bath-house built over the gas spring. It is introduced into a basin about one metre deep, in which the patients sit or stand clothed; the gas stimulates the skin, and an acceleration of the circulation is felt as a slowly-increasing, agreeable warmth, spreading all over the abdomen. These gas baths are used in cases of anaesthesia and hyperaesthesia, of neuralgia and paralysis, of amenorrhoea and oligomenorrhoea, of frigidity and of childlessness.

The public frequenting Franzensbad consists mostly of three groups: (1) Ladies suffering from different women's diseases, slowness and irregularity of the sexual functions, and principally from childlessness; (2) patients affected with debility, weakness of the nervous system, diseases and irregular functions of the heart and circulation; (3) people suffering from rheumatism and gout, and the uric acid diathesis and its consequences.

Visitors to Franzensbad will find bath-houses arranged with every requisite comfort, and excellent hotels, and boarding-houses surrounded by beautiful grounds and gardens.

LITERARY NOTES.

At a meeting of the Académie de Médecine, on June 3rd, Professor Pozzi, on behalf of Dr. Georges Hervé, Professor in the School of Anthropology, presented what he described as a very interesting study on the bust of Quesnay, by the famous eighteenth century sculptor Vassé, which is now in the Royal Museum at Brussels. Dr. Hervé's essay was read to the French Society of Medical History in April last. Dr. Pozzi described Quesnay, an account of whom was given in the Journal of June 7th, 1913, p. 1214, as one of the most vigorous intelligences of the eighteenth century. He added that Dr. Hervé's work is well written and richly documented, and gives a living picture of the man. The bust was exhibited in the Salon in 1771. The portrait reproduced in the Journal of June 7th was painted by Fredou, and engraved by J. C. François in 1767. There are several other portraits of Quesnay—one painted by J. Chevalier in 1745, and engraved by J. G. Wille in 1747; one done in 1764 for the Académie de Chirurgie by an artist unnamed. This is now in the Paris Faculty of Medicine. Besides the bust of Vassé already mentioned there is a posthumous one done by Houdon, and exhibited in the Salon of 1781; and one by Leroux on the monument erected in the commune of Méré, the birthplace of Quesnay, on the initiative of M. Allain-Lecanu in 1896.

We have received a copy of the May number of the *British Review*, with which is incorporated the *Oxford and Cambridge Review*. This periodical is printed in a style that must make it a joy to those whose eyes are beginning to fail. Mr. R. A. Scott-James writes with excellent sense on the popular taste. He says the finest literature is not that which is most read, and the writer concludes that the finest ideas are not those which are most easily embraced. "The outlet which the majority of men find for their superfluous energy is not through the channel of fine ideas. Such literature as they read is for distraction and not for the vigorous use of their faculties." This, says the writer, is a matter of supreme importance, because this new reading habit of the million has turned the energies of authors and publishers from the few to the many. "It has introduced into the literary profession a demagogic habit, and has set up a quantitative instean of a qualitative habit." Dr. F. W. Macran discusses idealism and the Christian Faith, and Mr. L. F. Salzmand gives an amusing description of sea travel in the Middle Ages. He quotes a fifteenth century rhymester's description of the accommodation for passengers on the boats plying to Santiago:

> A sak of strawe were there ryght good,
> For som must lyg them in theyr hood;
> I had as lefe be in the wood
> Without mete or drynk;
> For when that we shall go to bedde
> The pumpe was nygh our beddes hede,
> A man were as good to be dede
> As smell thereof the stynk!

Another writer of the same period, William Wey, gives the following advice to intending travellers by the boats plying between Venice and the Holy Land:

> Furste, yf ye goo in a galey make youre covenaunte by tyme wyth the patrone and chese yow a place in the seyd galey in the

overest stage; for in the lowyst under hyt is ryght smolderyng hote and stynkyng.

That the diet was not exactly that of one of our modern floating palaces may be gathered from the following advice to the traveller:

Ordeygne yowre byscokte to have wyth yow; for thow ye schall be at the tabyl wyth yowre patrone, notwythstondynge ye schal oft tyme have nede to yowre vytelys, bred, chese, eggys, frute and bakyn, wyne and other, to make yowre collasyun; for sum tyme ye schal have febyl bred, wyne and stynkyng water.

For these reasons the writer says it is well to take a barrel of water and one of wine, and, in view of the habits of pilgrims and sailors, it is hinted that a prudent man should keep both barrels in a chest with other stores under lock and key. The more luxurious passenger would also take care to lay in a good store of fruits and spices, "confectyunnys, confortatyvys, laxatyvys and restoratyvys," while the complete traveller's outfit would include, beside a feather bed, which would cost three ducats when new, and could be resold for half that amount at the end of the voyage, a "lytyl cawdren and fryyng pan," with plates, dishes and glasses. As an afterthought William Wey adds the advice to buy "a cage for half a dosen of hennys or chekyn to have wyth yow in the galey." So equipped the traveller did not need to fear any shortage of provisions, and could rest with equanimity while his ship lay becalmed, "walterynge and walowynge in the see."

The *Bulletin of the Johns Hopkins Hospital* for May contains an article by August Schachner on Ephraim McDowell, the "father of ovariotomy." He was born on November 11th, 1771, in Virginia, and after a period of pupilage under Dr. Alexander Humphreys, of Staunton, Virginia, a graduate of Edinburgh, he went himself to what was called the "Modern Athens" to complete his education. There he came under the influence of John Bell, who, in lecturing on diseases of the ovary, suggested that it might be possible to extirpate the diseased parts, though not daring to advise surgeons to attempt the operation. The seed fell upon good ground. McDowell seems to have left Edinburgh without a degree, and in 1795 returned to America, settling in practice at Danville in Kentucky, where he remained till his death. On December 13th, 1809, he was called to see a Mrs. Crawford, who was thought to be pregnant and to have gone beyond her time. McDowell, after examination, explained to her the nature of her condition and what he proposed to do for her relief. The first account of the operation was not published till seven years later. It may be interesting to reproduce it here, though it is well known to specialists:

In December, 1809, I was called to see a Mrs. Crawford who had for several months thought herself pregnant. She was affected with pains similar to labour pains from which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy that two physicians who were consulted on her case requested my aid in delivering her. The abdomen was considerably enlarged and had the appearance of pregnancy though the inclination of the tumour was to one side admitting of an easy removal to the other. Upon examination per vaginam I found nothing in the uterus which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted nor heard of an attempt or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation. She appeared willing to undergo an experiment which I promised to perform if she would come to Danville (the town where I lived), a distance of sixty miles from a place of residence. This appeared almost impracticable by any, even the most favourable conveyance, though she performed the journey in a few days on horseback. With the assistance of my nephew and colleague, James McDowell, I commenced the operation which was concluded as follows: Having placed her on a table of the ordinary height on her back and removed all her dressing which might in any way impede the operation, I made an incision about three inches from the musculus rectus abdominis on the left side continuing the same nine inches in length, parallel with the fibres of the above named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused which we ascribed to the resting of the tumour on the horn of the saddle during her journey. The tumour then appeared full in view, but was so large that we could not take it away entire. We put a strong ligature around the Fallopian tube near the uterus and then cut open the tumour which was the ovarium and fimbrious part of the Fallopian tube very much enlarged. We took out fifteen pounds of a dirty gelatinous looking substance after which we cut through the Fallopian tube and extracted the sac which weighed seven and one-half pounds. As soon as the external opening was made, the intestines rushed out upon the table and so completely was the abdomen filled by the tumour that they could not be replaced during the operation which was terminated in about twenty-five minutes. We then turned her upon her left side so as to permit the blood to escape after which we closed the external opening with the interrupted suture leaving out the lower end of the incision, the ligature which surrounded the Fallopian tube. Between every two stitches we put a strip of adhesive plaster which by keeping the parts in contact hastened the healing of the incision. We then applied the usual dressings, put her to bed, and prescribed a strict observance of the antiphlogistic regimen. In five days I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the future and in twenty-five days she returned home as she came in good health which she continues to enjoy.

One scarcely knows which to admire most, the boldness and skill of the surgeon or the courage and endurance of the patient, who rode sixty miles resting her tumour on the horn of her saddle, and getting up to make her bed five days after the operation. As a further proof of McDowell's resolution it must be added that an excited mob gathered outside his house awaiting the issue of the operation; had the woman died, the surgeon would have been lynched. Mrs. Crawford had five children, all born before the operation. She survived the operation thirty-three years, dying in 1842 at the age of 78. It is believed that the original report was sent in 1816 to John Bell, but, in Bell's absence in Italy, fell into the hands of Lizars. Another copy was sent to Dr. Physic, of Philadelphia, with a request that it should be published if found worthy. This, like the other, received no attention. McDowell's nephew William, the bearer of the report to Physic, then turned to Thomas C. James, Professor of Midwifery in the University of Pennsylvania, and one of the editors of the *Eclectic Repertory*, who published it (vol. vii, 1817). McDowell's second operation was performed in 1813 upon a negress. The ovary was exposed and incised but not removed, as it was firmly adherent to the bladder and the fundus. She recovered, had no more pain, and was able to pursue her occupation. The third, which was the last included in the first report, was performed in May, 1816, upon a negress. In this case he removed a scirrhous ovarium weighing 6 lb. Two other cases were described in a second communication published in the *Eclectic Repertory*. One was operated upon in April, 1817. It was a scirrhous ovarium weighing 5 lb. The patient recovered from the operation, but it gave more trouble than the others at the time, and the result was not so satisfactory. The fifth—operated upon in May, 1819—had been tapped four times before the operation. There were many adhesions. Sixteen litres of gelatinous fluid were discharged from the tumour and abdomen. Death from peritonitis occurred on the third day. The tumour was a dermoid cyst. These were the only cases McDowell reported. How many he actually did is not known. Samuel D. Gross collected three additional cases, all white. Of these eight cases five operations were complete and three incomplete. Of the complete operations, two in white women and three in negresses, there was one death among the latter, giving a mortality for these operations of 20 per cent. His nephew William, who was at one time his partner, says his uncle performed the operation thirteen times in all. He also performed lithotomy thirty-two times without a death, one of his patients being James J. Polk, afterwards President of the United States. McDowell's first reports were received with indifference and incredulity, in some quarters with ridicule. His first paper attracted no attention till it was published in connexion with one of Lizars's failures. This aroused Europe and later America to the importance of his work.

W. Wadd, in his *Nugae Canorae* (1827), tells of a Count de Viry who carried his desire for secrecy in regard to his ailments to such a degree that he called a surgeon to dress an ulcer on his leg and when a similar one broke out on the other he sent for a different surgeon. He wished apparently that his right leg might not know what was the matter with his left. To a person who inquired for him, his secretary said: "He is dead, but he does not wish it to be known."

British Medical Journal.

SATURDAY, JUNE 21ST, 1913.

UNIFIED STANDARDS FOR FOODS AND DRUGS.

THE simpler conditions of a smaller community and the absence of conservative traditions and of the dead-weight of old vested interests sometimes enable the Colonies to devise and put into force legislation on matters in regard to which, in Great Britain, it is generally admitted that something ought to be done, though the difficulty of satisfying the various interests concerned and the constant congestion of parliamentary business effectually prevent any considerable steps being taken. The recently published report of a Royal Commission, appointed in Australia about a year ago to take and collate evidence from those principally affected by legislation in regard to the sale of foods and drugs, contains a good deal which illustrates the truth of this generalization, and it is of some interest from the point of view of the admitted need for further legislation on the subject in this country. Dr. J. Ashburton Thompson, Chief Medical Officer of the Government of New South Wales, was the sole Commissioner, and the special purpose of the inquiry was the making of recommendations for setting up uniform standards for foods and drugs in all the States of the Australian Commonwealth.

The actual state of the law at present is by no means uniform in the several States. New South Wales, apparently, is in general somewhat ahead of the others, but it is more especially in the regulations and standards under the various State laws that the want of uniformity is greatest. Before the appointment of this Commission, however, some important steps had been taken in the same direction. In 1910 a conference was held of principal medical officers, public analysts, representatives of commercial interests on the advisory boards of the various States, and representatives of the Commonwealth Government, and this conference included in its report a code of definitions and standards, to which all the members had agreed and by which they had undertaken to be guided. The report of this conference and its proposed code have since been before the country, but have not been enforced by legislation, and the business of the Royal Commission was largely to receive and collate the views of those chiefly concerned, on the report of the conference, as a preliminary to the institution of regulations for the whole Commonwealth or uniform regulations in the several States. The 165 witnesses included manufacturers, dealers, analysts, medical officers, etc., and the report of the Commissioner on the evidence must therefore carry much weight. Among the general conclusions it is stated that "the result of the directed inquiry shows quite clearly that satisfaction with the law, and in a general sense with the regulations thus far made under it, is felt and has been expressed"; and, in dealing with the grocery trade, that "The Secretary and the President of the Grocers' Association of Victoria, which is the mouthpiece of the trade in that State . . . testified that the effect of the Act in general was entirely favourable to their trade"; and again, in connexion with aërated waters, cordials, etc., after discussing certain criticisms, the Commissioner adds: "Notwithstanding the opinions which have been noticed above, as well as others of less importance, the conference recommendations were generally welcomed, and, with the Acts on which they are based, were thought to have purified trade and to have done much good already."

It is recommended that the inquiry now concluded should be followed by the holding of a further conference of Commonwealth and State officials, to draw up a code for adoption in all the States; and it is wisely pointed out that "experience has shown, however, that the most carefully drawn code must be revised from time to time for addition of new regulations and more accurate wording of some of the approved regulations. This work can be done only by the conference. This body, then, must be regarded as liable to be reconvoked either every year, or perhaps every second year."

Of the recommendations in regard to particular trades, it is perhaps those concerned with drugs and medicines that are of principal interest to the medical profession. One of the resolutions of the conference expressed an opinion that repetition of physicians' prescriptions by pharmacists at the request of the persons who happen to possess them should be restricted by law; but some of the witnesses thought that the responsibility should be thrown on the physician, who would direct whether the prescription should be repeated, and if so, how often; "this," comments the Commissioner, "seems a reasonable suggestion." Another resolution of the conference "requests that the law may be so altered that pharmacists shall be required to declare the presence in any mixture devised and supplied by them of any drug of which declaration is required by notice on the label"; this was objected to, and "the objections raised were, first, that declaration of the names of drugs on labels was inexpedient, and would give patients information which had better be withheld from them, and then, secondly, that the requirement would interfere with, and limit, the pharmacists' power of prescribing. By some witnesses this power was described as a 'right' to prescribe, enjoyed by them from time immemorial until the New South Wales law was made." It is pointed out, however, that "pharmacists have no right to prescribe other than that enjoyed by every citizen, and exercised by each person at his proper risk. The nature of the pharmacists' business leads to their being asked to prescribe rather frequently, and they are, doubtless, often unable to avoid doing so; but the impropriety of seeking, and the danger of taking, medicines prescribed by persons who have some chemical knowledge of the nature of drugs, but no knowledge at all of the human body, are generally known."

In regard to proprietary medicines, the Proprietary Articles Section of the London Chamber of Commerce sent out a representative to put before the Commissioner the views of the members of that section. Objection was raised by this witness, among other things, to the recommendation that proprietary medicines containing more than 2½ per cent. of alcohol should bear on the label a declaration of the amount present. It was urged that instead of this the law should be made the same as the Canadian Act of 1908, which requires that no proprietary medicine shall be sold "if it contains alcohol in excess of the amount required as a solvent or preservative, or does not contain sufficient medica-

tion to prevent its use as an alcoholic beverage." Another recommendation which was objected to on behalf of the owners of proprietary articles is that a proprietary medicine containing any drug in a list which is set forth—44 being named and others included as classes—should bear on the label a declaration of the presence of such drug and of the quantity or proportion present. It was asked that this should not apply to medicines the proprietor of which made a statutory declaration that "the doses of the drugs they contain do not exceed those prescribed by the *British Pharmacopœia*"; but the list contains many drugs which are not in the *British Pharmacopœia*, a point which appears to have escaped the notice of the Commissioner. His comment on this part of the evidence is "the reasons advanced by him were not clear, but the whole consisted in a statement of the witness's belief that the inscription would frighten the public and prevent them from purchasing, which, in country places far from physicians, would be against the public good." The same witness urged the financial importance of the interests which he represented, estimating the stocks of proprietary medicines held by various traders in the Commonwealth at £3,125,000, and the amount spent by the proprietors in advertising in Australian newspapers as £160,000 annually.

The Commissioner's final comment on the evidence on this subject is unfortunately as true here as in Australia: "The extent to which the daily press profits by this trade will also be thought to indicate some further difficulty in regulating it."

SLEEPING SICKNESS AND BIG GAME.

THE discovery made by Yorke and Kinghorn during their expedition in 1911 to North-Eastern Rhodesia that the trypanosome *T. rhodesiense*, the infective agent of sleeping sickness in Rhodesia and Nyasaland, was carried by *Glossina morsitans*—the tsetse fly which causes nagana, the fly disease of domestic stock—put a new complexion upon a problem already sufficiently difficult of solution. It had been supposed that the only insect vector of sleeping sickness was *Glossina palpalis*, a species limited in its distribution to watercourses and never found far from the banks of certain rivers or the lake shores. *Glossina morsitans* is independent of water and may occur in any part of the bush. This was disquieting enough, but Yorke and Kinghorn went on to show that the big game in the two districts examined—the Luangwa Valley and part of the Congo Zambesi watershed—were tolerant of *T. rhodesiense*, and that a large percentage carried it in their blood. It appeared therefore that the big game acted as a reservoir of the parasite, and in view of the practical impossibility of exterminating *G. morsitans* Dr. Yorke was led to make the suggestion that the big game in the districts infected with the Rhodesian trypanosome should be killed off or greatly reduced—a result which the native hunters and European sportsmen would be ready enough to accomplish.

The *Proceedings* of the Zoological Society for June contain a paper by Dr. Yorke in which he developed the same argument as in the paper published elsewhere in this issue (p. 1315), and also give in an appendix the opinions of several authorities on parasitology or on the fauna of South Africa. Mr. Guy Marshall, who spoke as one who had resided thirteen years in Southern Rhodesia, questioned whether there was any evidence that human trypanosomiasis was spreading north or south of the Zambesi river. He admitted that there was in Rhodesia and Nyasaland a very virulent form of trypanosomiasis carried by a *Glossina* with a wide local distribution and a much more persistent biter than *G. palpalis*, and, further, that a considerable percentage of the game was infected by *T. rhodesiense*. The existence of sleeping sickness in the district had been known for nearly five years, and he contended that its incidence in Nyasaland and Rhodesia presented a striking similarity with that found in West Africa. He argued that this fact taken in conjunction with other considerations strongly suggested that it was not a new disease, but one which had already been endemic for some years, though, as occurred earlier in West Africa, it had escaped detection. To these arguments Dr. Yorke replied that the question whether the disease were new or old was of secondary importance—the matter of primary importance being whether it was spreading. Though it was difficult to answer the question from the statistics available he believed that there was strong evidence that during the past few years sleeping sickness had been on the increase. It was not until the end of 1909 that the first white case was discovered, and since then, although the Luangwa Valley had been closed a number of Europeans had contracted the disease in North-Eastern Rhodesia. Before 1909 scientific experts had travelled through the Luangwa Valley without discovering a single case, either native or European. Another argument advanced by Mr. Marshall was that there was good evidence that the natives of West Africa were very largely immune to *T. gambiense*, and that there was no good reason for assuming that a similar power of resistance to *T. rhodesiense* might not exist in East Africa. In reply to this point Dr. Yorke stated that there was no evidence that human beings could harbour the parasites for long periods as did the wild fauna without exhibiting signs of the disease. Among the cases he had observed, several presented practically no symptoms when discovered, the only indication being the presence of trypanosomes in the blood, yet without exception all were dead within six months.

Professor Minchin, who accepted all the statements of fact in Dr. Yorke's paper, said that the two African trypanosomes deadly to man—*T. gambiense* and *T. rhodesiense*—were members of the large group typified by *T. brucei*; he believed that all the species of the *brucei* group were primitively parasitic upon wild ungulates, but that many had been carried by the agency of biting flies to other vertebrate hosts, in which they had been able to maintain themselves; that the wild ungulates were the natural hosts of these trypanosomes was, he argued, shown by the fact that the group was harmless to the wild ungulates but deadly to other animals. Professor Minchin urged that the utmost caution should be exhibited in putting into practice administrative measures based upon the data so far established; he thought it probable that if the tsetse flies in the bush were deprived of their natural hosts they would migrate in search of food, which they would find in human beings and in the cattle surrounding their habitation; it was within the bounds of possibility that the wholesale destruction of big game might lead to a condition of things more dangerous and disastrous than that existing at present. To this Dr. Yorke replied that cattle were not as a rule found in villages in fly districts, and that the fly did not invade villages around which there was a clearing, even though by so doing they could obtain food more readily than in the bush. To a suggestion by

Mr. Walter Rothschild that after the extermination of the game the fly would be driven to attacking monkeys, rats, and mice, Dr. Yorke replied that if this occurred these animals would quickly succumb, and would therefore not have the same significance as reservoirs of the disease as the big game, which are tolerant of the parasite. In reply to some observations by Sir Henry Seton-Karr, Dr. Yorke contended that the connexion between big game and sleeping sickness had been fully established, and that, even if there were other reservoirs of the virus, that was no reason why the main reservoirs should not be destroyed. While admitting Sir Henry Seton-Karr's contention that the greater freedom of intercourse among tribes under white protection had played a part in the spread of the disease, he contended that if civilization was to continue this freedom of intercourse must also continue, and it was therefore all the more essential to endeavour to render the tsetse flies as non-infective as possible by destroying the reservoir of the virus in the big game. In answer to a question by Sir Alfred Sharpe, K.C.M.G., as to the varieties of tsetses proved to be carriers of trypanosomes of sleeping sickness, Dr. Yorke said that it had been established that *Glossina morsitans* transmitted sleeping sickness under natural conditions—a fact which showed that it was almost hopeless to attempt to get rid of the trypanosome agent. If, therefore, anything was to be done, it must be in the direction of destroying the reservoir from which the *Glossina morsitans* and other hypothetical vectors derived their infection.

Dr. Yorke's suggestion is not that the whole of the game in tropical Africa should be destroyed, but that the restriction in fly areas should be removed, and natives and Europeans encouraged to kill game in those areas, especially in the vicinity of human habitations. We believe the suggestion that the attack must be directed against the reservoir, in view of the apparent hopelessness of materially diminishing the numbers of the transmitting insect, to be sound and based on scientific principles. If the natives were given a free hand with the game, and European large game sportsmen allowed to shoot as many antelopes as they liked, the stock would soon be enormously reduced, with a proportionate reduction of the risk of the game being a danger to man, black or white.

CONSTITUTIONAL REFORM.

We venture to invite the careful attention of all members of the Association to the report of the Council on the reform of the present constitution of the Association, adopted by it at its special meeting on June 13th and referred to the Divisions. It is published in the Supplement, and prefixed to it is a short account of the proceedings at the meeting of the Council at which it was discussed. It will be seen that the Council expresses its concurrence with the view put forward by the Metropolitan Counties and other Branches, and endorsed by the Organization Committee, to the effect that the Representative Body should cease to be an assembly of delegates bound to vote in a given way irrespective of the evidence placed before them at the Representative Meeting, by other members of that body, by the Council, or by the logic of events which have taken place since the meetings of the Divisions at which they were instructed. The view that the object to be aimed at is a body with deliberative powers consisting of men of judgement and honesty of purpose trusted by those who elect them and believed by their constituents to represent the feelings and opinions of the constituency is accepted. The Council also agrees with the opinion that the Representative Meeting is too large and ought to be reduced, but recognizes the difficulties in the way, and regards the reduction of the number of constituencies as inadvisable and more or less impracticable.

The Metropolitan Counties Branch recommended that the Council should be elected by the Representative Body with the exception of those members who would sit *ex officio* or as representatives of Colonial Branches. The Organization Committee pointed out the difficulties which stand in the way of this change, desirable as it may appear as a logical development of the present constitution. The Council after a long discussion finally expressed the opinion that no change should be made in the present method of election.

Difficulties which have occurred during the last two years in taking prompt action in the interests of the Association and the profession at large are within the recollection of every member. They have led many members to the view that the Representative Body should delegate its powers in the interval between one of its meetings and another to the Council. This policy it is thought would contribute to efficiency, while at the same time it would be adequately safeguarded by the regulations which give to seven constituencies the right to requisition a Special Representative Meeting.

Following on this report is another in which the Council, after indicating reasons why it can seldom or never be necessary to take a plebiscite of the whole body of members of the Association, submits to the Divisions the arguments in favour of introducing a system under which an appeal by a postal vote could be made to the members of the Association resident in an area such as England, Wales, Scotland, Ireland, or a Dominion.

Several other suggestions concerning proposals for alteration in the scope and constitution of the Association will be dealt with in a supplementary report of the Council to be issued in the Journal of July 5th after the quarterly meeting of the Council on July 2nd.

THE DISCUSSION OF THE AMENDING INSURANCE BILL.

Though no date seems yet to have been fixed for the introduction of the Insurance Act Amendment Bill, the intention of the Prime Minister appears to have been to refer it, after it had been read a second time, to a Grand Committee. This has caused much dissatisfaction, both among members of the House of Commons and outside. The Insurance Act has been the chief piece of social legislation accomplished by the present Government, and whatever view may be held as to the merits or demerits of its conception, public opinion demands that the amendments it is admitted to require shall be fully understood and the arguments in debate fully brought to public notice; this will not be the case if it is sent upstairs. The bill ought not to be withdrawn from the consideration of the whole House, for it deals with matters in which the constituents of every member are nearly interested. Moreover, discussions in Grand Committee always tend to be less full and less thorough than in Committee of the whole House, and the reports published in the press are always meagre. It is now admitted on all hands that the haste with which the concluding stages of the bill itself were hurried through at the end of 1911 was mistaken, and is, in part at least, responsible for the need of amendment at this early date. On every

ground, therefore, we hope that the clauses of the amending bill will be discussed not in the comparative obscurity of a Committee room but on the floor of the House.

THE AIMS OF EUGENICS.

THE annual general meeting of the Eugenics Education Society was held at the Grafton Galleries on Thursday, June 12th, when Major Leonard Darwin, who was elected to his third year of office, delivered the presidential address. The speaker, in commenting on the progress made by the society during the past year, said that one good effect of the promulgation of its doctrines was the establishment of several new branches in different parts of the country, those at Manchester and Glasgow being among the most recent, whilst the International Eugenic Congress held in London last year had resulted in the foundation of a number of similar societies abroad. But much remained to be done, and further support was needed for the eugenic movement, both as regards volunteers and supplies. Moreover, it was the right kind of support that was needed, for there was always a danger that eugenics would become a mere dumping ground for cranks. This was possibly due to the fact that the more thoughtful classes in the community stood aloof and took little interest in the movement, no doubt because of a misconception of the aims of the eugenists. It was necessary, therefore, that they should be made to understand what these aims were, and that eugenics did not mean the establishment of stud farms for the breeding of giants and geniuses, but rather the improvement of posterity by means of a more thorough knowledge of the laws of heredity. After speaking of the dangers of national degeneracy, Major Darwin pointed out that the expenditure on law, police, the poor, and lunatic asylums in the United Kingdom amounted to £48,000,000 and the impost for national insurance to £25,000,000 a year, and the latter sum could either be diminished or the benefits increased if there were fewer of the unfit amongst the insured. By the elimination of the unfit, moreover, the rate of wages would inevitably be raised. Eugenic reform, therefore, if successful, would lower taxation, raise wages, facilitate commercial competition, and increase the security of the country in time of war. In things immaterial also great benefits would also be felt; for a diminution in the number of the insane, the criminal, the feeble-minded, the diseased, and the wastrel, annually brought into the world, would mean the removal of a terrible burden of unmerited misery, whilst an increase in the output of men and women of character and ability would not only add to the reputation of a country, but also to the happiness of its inhabitants in many ways. These were the benefits which it was held to be in the power of this generation to bestow on the country in the future by resolutely grappling at the present moment with the problem of human heredity. The social reformer had long been busy in his attempts to improve the environment of the people, and his efforts merited the warmest approval. Progress in the evolutionary sense, however, was not thus certainly promoted, and might not be promoted at all. What was really needed was an intellectual campaign which would make the path of eugenic reform stand out more clearly by increasing the knowledge of the laws of heredity, and a moral campaign to make our fellow-countrymen ready to accept the sacrifices necessary to ensure the racial progress of their country in the future.

MEDICINE AT OXFORD IN THE MID-VICTORIAN PERIOD.

ALTHOUGH a medical school has existed at Oxford from a very remote period, and degrees in physic were conferred as early as the thirteenth or fourteenth century, science can scarcely be said to have flourished in the "home of lost causes" till Sir Henry Acland, by his indefatigable efforts, made the "lost medical school" a living thing. When he was appointed Regius Professor of Medicine in 1857, he found it in a state of suspended animation nigh unto death. There were not forty men on the books of all the colleges and halls who could legitimately append "M.D." or "M.B." to their names. It is significant that a candidate for the degree of M.D. was allowed such latitude in the choice of a subject for his thesis that it was said at one time that the distinction might have been conferred for a knowledge of volcanoes or for an acquaintance with the atomic theory or the botany of Virgil. If the Oxford doctor of that day added some knowledge of the elements of medicine to his more elegant accomplishments, he had done all that was expected of him. How little science was thought of is amusingly shown by the following story related by Mr. A. R. Bradley, son of a former head master of Marlborough, in a recently published book.[1] It was, he says, told to him by his uncle, the late Dr. Edward Fox of Clifton, who had been in the sixth form at Shrewsbury under the famous scholar, Dr. Kennedy. Fox went on to Balliol, and, being intended for the medical profession, he applied his very considerable talents to scientific studies, and took a first class in the then newly-instituted science school. He was actually the first "first class" in the Oxford Science School. Writing confidentially and light-heartedly to his old chief for the usual half-holiday for the boys in honour of the occasion, he received a characteristic reply of kindly indignation from that severe classic. Every one, wrote Kennedy, knew that no master rejoiced more in his pupils' classical triumphs than he, while even mathematical honours gave him no little gratification. He was always pleased to hear, too, of successes in athletics, and for personal reasons he congratulated his old pupil on achieving such measure of success as he had deliberately limited himself to; but really to ask for a half-holiday for science honours was, in short—well, a most audacious proposal! It may be remembered that Charles Darwin, when he was at Shrewsbury, was taken to task by Dr. Butler for wasting time that should have been given to the classics on such useless subjects as chemistry.

HYDRO-APPENDIX.

OWING to the great frequency of inflammation of the vermiform appendix and consequent operations for its relief, many unrecognized morbid conditions of that structure have recently been brought to light. Amongst them is a disease homologous, as far as the mechanism of the change in the tube and cystic duct is concerned, to hydrosalpinx and dilated gall bladder. It would appear, however, that the pathology is different, for the obstruction which brings about dilatation of part of the appendix is always tuberculous. This is an assertion important to remember whenever a cystic tumour is detected in the right iliac region, especially in considering prognosis after removal. Jaboulay seems to have been the first to distinguish this disease, when he removed an appendix from a boy aged 16 in 1898; five years later Lesueur wrote on dilatations of the appendix associated with tuberculosis, but the distensions—circumscribed cavities holding cheesy matter or pus—are not dilatations homologous to a hydrosalpinx. The contents of a true hydro-appendix are clear and mucous. About a dozen cases have been observed, all in French hospitals, and out of these only two have been reported, and both in theses. As the contents of the cystic appendix are clear, the operator might be misled, overlooking the tuberculous nature of the disease. An instructive monograph on the condition has been published recently by M. Duroux, who has worked under M. Jaboulay[2]

[1] *Other Days; Recollections of Rural England and Old Virginia.* 1850–1880. Constable and Co.

[2] De l'Hydro-Appendicitose. *Revue de gynéc. et de chirurg.-abdom.*, February, 1913, p. 143.

in Lyons. He distinguishes two forms. The dilatation may be general, and then the appendix assumes the form of a banana, and in a female patient might well be taken for a certain type of hydrosalpinx, especially if free adhesions involving the pelvic viscera adjacent to the right iliac region are present. The most characteristic form of hydro-appendix shows irregular dilatation. A bilocular type, a basal unilocular variety, and an apical unilocular form are figured by M. Duroux. In all three drawings the relations of the meso-appendix and caecum clearly indicate the seat of the cystic structure. Eleven cases are recorded in full. In nine the patients were males, and two of these males were children. In all, relief was sought on account of the characteristic symptoms of inflamed appendix, excepting in one instance in which the patient died in hospital of chronic phthisis and haemoptysis; this was the only case where no operation was undertaken. Intermittent attacks and variations in the size of the swelling, the latter so familiar in hydrosalpinx, were frequent. Out of the ten cases operated on all recovered excepting a man aged 32, who had once been under treatment for phthisis which subsided. The wound was drained, but the tract ulcerated and could not be induced to heal. Miliary tuberculosis developed, and the patient died three months after the removal of the appendix. One patient was in good health five years after the operation; another, a boy aged 8, was well about six months after the appendix was removed, and so was a man aged 29, who had suffered nine years before from phthisis with pleurisy and haemoptysis. The other cases operated on were lost sight of. The necessary treatment of hydro-appendix is clear, but the study of a larger series of cases than that which M. Duroux has collected with great labour is necessary before definite conclusions can be reached. More than one case already recorded suggests that operative interference is perilous when tuberculous processes are going on elsewhere.

DEATH BY LIGHTNING.

SEVERAL deaths by lightning stroke have already occurred in this summer of quick atmospheric changes. Many people otherwise strong-minded enough are apt to lose their wits in a thunderstorm, and if they do not take refuge in the coal cellar or ring consecrated bells by way of conjuration, they are made acutely uncomfortable. Their fears may be, at least partly, allayed by an article in *Knowledge* for June. Mr. Marriott, the Secretary of the Royal Meteorological Society, says there that during the ten years 1901–10 the Registrar-General reported 124 fatal instances of lightning stroke in England and Wales—108 in men and 16 in women—a yearly average of only 12.4 deaths, or 0.36 per million living. In the twenty-nine years 1852–80 there were 546 such deaths, the yearly average for that period being 18.8, or 0.88 per annum per million living. The annual death-rate from lightning varies widely in different parts of England. In the north Midlands from 1852 to 1910 it was 1.8 annually per million living, in the metropolitan district only 0.13. On the Continent much higher yearly death-rates are found. In Hungary the annual death-rate from lightning is said to be 16 per million living (Milham); in Styria and Carinthia about 10 per million; in Prussia 4.4; in France and in Sweden 3; in Belgium 2, so far as the imperfect statistics available go (McAdie and Henry). In the United States of America the annual death-rate per million is high—about 10—in consequence of the frequency of thunderstorms on the one hand and of the large percentage of the inhabitants engaged in outdoor labour on the other; about 700 or 800 deaths from lightning were estimated to occur in the United States every year by Henry in 1900 to a population of 76 millions. Many more people are struck by lightning than are killed. For example, Jack records an instance in which a church was struck; 300 people were in it, 100 were injured and mostly made unconscious, 30 had to take to their beds, but only 6 were killed. Weber gives an account of 92 people struck in Schleswig-Holstein; 10 were killed, 20 paralysed, 55 stupefied, and 7 only slightly injured. In 1905 a tent with 250 people in it was struck and 60 were left on the ground in various states of insensibility, 1 was killed outright, another breathed for some minutes before dying, the rest recovered.

BALNEOLOGY AND CLIMATOLOGY.

AN interesting feature of the approaching Annual Meeting in Brighton is the inclusion for the first time among the authorized sections of one devoted to the subject of balneology and climatology. No doubt this is in a measure due to the fact that the meeting is to be held at a well-known health resort, but it is also a tribute to the improved position attained by these sister departments of medicine. Judged by the evidence of the oldest historical document to which the public at large has access treatment of diseases by balneological processes is among the most ancient practices of civilized man; but curiously enough, despite this fact, balneology and its companion have somewhat lagged behind other special branches of scientific medicine and surgery. Probably this is owing to their progress having been handicapped by several circumstances. A study of the index of the transactions of any balneological and climatological association or society will show that in practice it is not always easy to decide what subjects truly fall within their scope; while another obstacle has been the sometimes inevitable association of some balneological and climatological practice or theory with the material prosperity of a particular health resort. Furthermore, quite apart from such factors, both balneology and climatology present peculiar difficulties as scientific therapeutic studies. If they are approached from the clinical standpoint and an attempt is made to judge the accuracy of the theories concerned in them by the result of their application in a given case, there is always the difficulty of deciding how much is due to balneological and how much to climatological factors; while, when approached from the laboratory standpoint, they involve consideration of many of the most delicate problems of biochemistry. No doubt all these facts have been borne in mind by the officers of the new Section, since of the two subjects which they have chosen for special discussion one is sea-bathing and the other the international aspects of British health resorts. The first will afford an opportunity for endeavouring to distinguish what results, favourable or unfavourable, of sea-bathing are due to this form of treatment itself as distinct from its surroundings. It is by no means an easy question for an ordinary practitioner to decide, since in the case of a very large number of patients indulgence in sea-bathing means in addition change of climate, change of habit, and relaxation from the ordinary cares of existence. The second discussion, one may feel assured, will lead to its being shown that the topical associations of balneology and climatology, to which allusion has been made, are not inevitable, and that within the area of the British Isles there are facilities for almost every form of balneological and most forms of climatological treatment.

THE HALO OF BEAUTY.

IN the June number of the *Girl's Own Paper and Woman's Magazine* "An Old-Fashioned Person" writes on the troubles of the pretty girl. She tells us that she herself was a pretty girl, and of course we have no reason for doubting her word. But when she says that "in her girlhood she was so native to her element that the laws of hygiene scarcely applied to her," we can only wonder, while a little puzzled as to her meaning. We know, of course, that Thomas Walker, the author of *The Original*,

claims that by diet he reached a state of health in which he did not need to wash his face. His skin by some mysterious exhalation "repelled impurity." The "Old-Fashioned Person," however, was not only "gloriously independent of soap," and needed no starch bags for her complexion like other girls, but she never perspired, and did not tan or freckle. All this, however, is a trifle, for she goes on to say: "I was so full of life and so heartily well that I believe I gave off a sort of quivering iridescence that 'charmed' certain beholders. I do not expect the reader to understand this. I don't understand it myself—but several times I have seen strange manifestations of quivering vibrations rendering the human face and form transparent to the gaze, and edged at every outline with the colours of the prism. This is doubtless in the eye of the beholder; but there is something, too, in the object, or else we would oftener see people and things in this prismatic and quivering light—this strange halo that surrounds the pretty girl, . . . I do not know, but I believe there is a sixteen-year-old halo that a girl's face wears which must belong to the astral life—her angel prototype maybe trying to stand between her and an unkind world." We can only say that the privilege of seeing this halo of beauty has been so far denied to our grosser vision. The healthy sixteen-year-old girl as we know her glows with health, but her appetite is too carnal to be compatible with any visible manifestation of the astral life. Does the angel prototype desert the young girl when she sheds her halo? We gather that this takes place, for the "Old-Fashioned Person" believes that the time is not far off when women will be courted for other possessions than beauty. This, we take it, is a necessary consequence of the loss of the sixteen-year halo. A frivolous person might say that there are other "possessions" for which women are often courted. But it is mental qualities which, according to the "Old-fashioned Person," will attract men. This, she says, will be a great change, and will have a decided effect upon beauty. If you ask what effect, you are told that "it has so long been women's chief business to retain what is called her 'charm' for man, and she has resorted to such base means to do so, that in her new position before the world I believe she will scorn to employ the artificial, the immodest, and the loud." This is sound doctrine, and the lady is evidently a strong believer in the influence of the mind, if not on the body, at any rate, on its appearance. She says: "Could this world of ours drop all false beliefs and take up the only true idea which is simply the practice of good, all people would become more beautiful with a beauty that age cannot destroy." This is highly edifying, but regard for truth compels us to state that we have seen many excellent persons whose looks sadly belied the inward grace of their souls. When some one said to Sir Francis Burnand, "*Punch* is not so good as it was," he replied, "My dear fellow, it never was." This may serve as a general formula of reply to the *laudator temporis acti*. The "Old-fashioned Person" tells us that forty years ago the pretty girl was a genuine article; that bleached hair had never been heard of; that face powder was but "a vague accessory of Satan," and that low necks were utterly tabooed. All which propositions, as Teufelsdröckh says about the maxims on dandyism which he extracted from *Pelham*, we, for the present, content ourselves with modestly but peremptorily denying. Women have always been open to Hamlet's taunt: "God hath given you one face, and you make yourselves another." The "yellow topper" was as common in the early seventies as she is to-day; and it may be added that, to go no further back, the art of bleaching the hair was familiar to the Venetian ladies of the time of Titian. The connexion between face powder and Satan was not clearly recognized, and "low necks" were enforced at Court with a rigour which paid no heed to age or state of health. Certainly gowns did not then, as a rule, begin so late or leave off so early as they do now, and the outlines of the female figure were not so ungracefully displayed. On the other hand, there was, of course, the "halo of beauty." Perhaps the modern high school girl, devoted to hockey and cricket, can take care of herself without the help of an "angel prototype."

THE ENDOWMENT OF MEDICAL EDUCATION IN AMERICA.

It is announced that Mr. Andrew Carnegie has offered to give to Vanderbilt University, Nashville, Tennessee, £200,000 for the development of its medical department. Of this amount the sum of £40,000 is to be given at once for the erection and equipment of laboratories, while the balance (£160,000) is to be given as an endowment, the income of which will be paid annually for the support of the medical department. A condition of the gift is that the direction of the educational and scientific work of the department shall be entrusted by the trustees to a small board of seven members, three of whom are to be eminent in medical and scientific work. The *Journal of the American Medical Association*, from which we take this information, states that Vanderbilt University has always enforced reasonably high standards of preliminary and medical education, and Mr. Carnegie's gift will, it is hoped, enable it to overcome the difficulties it has hitherto met with in carrying out its work.

HOW A HOSPITAL AUTOCRAT WAS TAMED.

The relations between the medical staff and the lay administrators of a hospital are not seldom strained. There may sometimes be faults on both sides, but we think there can be no question that the friction is, for the most part, caused by fussy interference and attempts at actual usurpation of authority, which are not unnaturally resented by the doctors. This state of things is from every point of view deplorable and interferes with efficiency. Examples could be given from many hospitals in this country. We prefer to give one from abroad. A curious instance of the lengths to which administrators are apt to magnify their office is related of the director of a Paris hospital, a worthy man but rather jealous of his authority, and disposed to play the petty tyrant over the residents. He was always seeking for occasions to assert himself in this way. One morning he issued a ukase forbidding residents to receive any cases of emergency unless a precise diagnosis of the disease was entered on the card of admission. This caused something like dismay, the residents being naturally aggrieved at being asked to make a snapshot diagnosis in cases where the very princes of science were often at a loss. They took counsel together, and one of them, who has since risen to eminence. conceived the brilliant idea of recording a uniform and extravagant diagnosis in every case. From that time all emergency cases of every kind were entered under the head of anencephaly. The director at first congratulated himself on having discovered grievous laxity among the residents. Hitherto these gentlemen had evidently been receiving anencephalous patients without knowing it. The cases were labelled pneumonia, rheumatism, and so forth, and the patients were admitted without the disease being recognized. The good man thought with satisfaction of the progress in science he had been the means of making. Soon, however, he became alarmed at the number of anencephalics admitted. The disease raged in Paris with appalling severity. Accordingly he warned his clerks and other subordinates to adopt the strictest hygienic measures to protect themselves and their children from the devastating scourge. In the meantime the epidemic ran its course and the registers of the hospital overflowed with entries of anencephaly. Then came a statistician who was collecting cases to illustrate some novel

theory. He was astounded to read case after case of this kind: Stonecutter, aged 65, anencephalic; washerwoman, aged 42, anencephalic. He counted up to 130 of such entries. Astonished at the number of cases of anencephaly in persons of such ages, he had an interview with the director which opened the eyes of that functionary. He fulminated against the residents, but to no purpose, and the obnoxious decree was rescinded. By way of revenge he soon afterwards issued a new edict forbidding the routine making of *post-mortem* examinations. Again the residents met, and thenceforward all deaths were entered as "suspicion of poisoning." Now, in such cases the French law requires a *post-mortem* examination to be made, and this must be done in the presence of the director, a commissioner of police, and a doctor not connected with the hospital. The result was that the unhappy director had to spend a large part of his time in the dead-house. Soon the commissioner of police, who was also a victim of the suggested prevalence of poisoning, devoted the hospital and the director to the devil and declined to allow himself to be disturbed, for of course no trace of poisoning was ever found. The director, whose health was suffering, had to make a sacrifice of his bureaucratic obstinacy, and thenceforward he ceased to trouble the residents and allowed them to do their work in the accustomed way.

PAYMENT BY POETRY.

In his *Voyage en Italie*, Théophile Gautier relates that he saw in an Italian city a sonnet inscribed on a wall in a conspicuous place in praise of a doctor who had cured someone of a disease of the liver. This sonnet, which was written in the most florid style and packed with mythological allusions, recorded the fact that the Parcae had tried to slit the thin-spun thread of a patient's life, but were foiled by the art of the doctor. That learned man, accompanied by Aesculapius and Hygiea, had, it appeared, descended to the lower regions where he blunted the scissors of Atropos and entwined with fresh yarn the spindle of Clotho; the web of life was then woven anew by Lachesis. Gautier was pleased with what he called "this ancient and naïve way of expressing gratitude." Wordsworth says, "With this key Shakespeare unlocked his heart," and we are willing to believe that the author of the sonnet mentioned by Gautier did the same. But did he unlock his purse? If all patients were to pay their doctors in sonnets the medical crisis would be considerably more acute than it now is. We can only hope that the doctor celebrated in the manner related by Gautier was a lover of poetry and had a soul above any sordid wish to be paid for his skill in some less ethereal currency. But perhaps the poetical advertisement on the wall brought a solid return. Even taking this result into account, what a dreadful thought it would be for any man with the most elementary sense of humour to have his praises sung in classic verse and published as a poster!

THE FRIEDMANN CURE FOR TUBERCULOSIS.

According to the *Medical Record* of June 7th, the Board of Health of New York, at a meeting held on May 29th, adopted a resolution constituting an amendment to the Sanitary Code, the immediate effect of which was the closing of the Friedmann Institute in that city. The adoption of the amendment followed a meeting of the Advisory Board of the Board of Health at which the latter was recommended to take action. A resolution was passed that: "Whereas certain tests of the efficiency and safety of an alleged cure for tuberculosis now being made in this city are now being rendered unsatisfactory, unscientific, and practically futile through the insistence of the originator of the alleged remedy on conditions which involve inadequate observations, inaccurate methods of administration and the insistence on secrecy regarding the substances employed in some phases of the treatment; and whereas evidence is already at hand to show that the so-called remedy not only does not fulfil the promises of efficiency and safety under which its use was at first permitted in this city, but, on the contrary, during its administration many patients have suffered serious and unduly rapid progress of their disease; therefore the use of living bacterial organisms in the inoculation of human beings for the prevention or treatment of disease is prohibited in New York City until after full and complete data regarding the method of use, including a specimen of the culture and other agents employed therewith, and a full account of the details of preparation, dosage, and administration shall have been submitted to the Board of Health, and until permission shall have been granted in writing for the use of the same."

We regret to have to record the death at Keswick, after a short illness, of Dr. Maclaren, consulting surgeon to the Cumberland Infirmary, Carlisle. Some account of his career will be given in an early issue.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The Local Government Board.

In connexion with the vote for the Local Government Board, an interesting debate occurred in the House of Commons on June 12th.

Mr. Walter Long moved a reduction of the Vote by £100, and said that he did so not on any grounds of personal hostility to the President of the Local Government Board, for he shared in the feeling of great admiration for the strong commonsense and courage with which Mr. Burns dealt with the many problems which confronted him. During his long tenure of office Mr. Burns on the whole had had a very free hand, and it was interesting to reflect upon the fact that it was left to what it was said was the most Radical Government the country had ever had to find in more than one of its Ministers a most determined autocrat. With reference to the laws affecting public health, Mr. Long said that the determination of the State to make certain contributions in respect to the salaries of certain local officials, and to give the Local Government Board power to exercise discretion in the appointment of those officials, taking at the same time the responsibility of paying portion of their salaries, was one of the greatest steps over made in connexion with this most important branch of local government. On the question of the housing of the working classes, the President, in his opinion, had been guilty of a very great failure in the discharge of his duty. There was probably something like 100,000 new houses of a decent class required for the working classes. It had been suggested that local authorities should be given power to do the work, and that the State should contribute to the cost. Some members opposite could not hear this question discussed without immediately taking the view that it was an attempt to place on the State a burden which ought to be borne by the landowners. He would support the appointment of a Committee not composed of landowners, but to be drawn from the critics of landowners entirely, to inquire what the true state of the case was as regards the landowners of this country. He firmly believed that the large landowners had provided a sufficient number of good cottages for labourers, and denied altogether that any proposal to lighten the burden in connexion with cottage building by the local authorities would necessarily involve giving relief to the owners of the land. He was willing to abide by the decision of such a Committee on this question. Mr. Long then referred to what he regarded as the smallness of the results arising from the Act of 1909, and criticized adversely the action of the Local Government Board. With regard to vaccination, he said that he deplored the large increase in the number of

unvaccinated children, and could not help thinking that some day the results might be very grave. In his opinion this state of things was partly due to the insufficient remuneration of vaccination officers. They were paid under the old system of fees; the fees had decreased as the cases had decreased, and a large number of men in the country were doing work of the most important character on wholly insufficient remuneration.

Sir A. Griffith Boscawen said Mr. Burns had claimed that he could do everything necessary with regard to housing under the present law. If the law was now sufficient the administration must be very much at fault. The state of housing in towns and country districts, as well as in mining districts, in many parts of the country was deplorable. Sir William Lever had said that there were 100,000 deaths every year from overcrowding—a bigger number than were killed during the South African war. Mr. Burns's Housing Act had indeed done more harm than good, since it was better to have even insanitary houses for people to live in than no houses at all. During the first two and a half years after the passing of the Housing and Town Planning Act, only 315 houses were provided by local authorities; 100,000 cottages were needed at once, and at that rate of progress it would take a very long period to obtain them. A new administration and a new law, and, he ventured to think, a new President of the Local Government Board, were wanted if this matter was to be satisfactorily dealt with.

Lord Henry Cavendish-Bentinck said that the President of the Board of Agriculture had stated that 100,000 cottages were necessary to be built in the next five years. Since the Act of 1909 came into operation loans for 3,000 cottages had been sanctioned, and at that rate it would take something like a hundred years before existing requirements were satisfied. It was a serious reflection on the Liberal Government and the Liberal Party generally that there were only about 2,000 fewer children in workhouses than there were when they came into office.

Mr. Leif Jones called attention to the question of water supplies.

Mr. Herbert Lewis said that a survey of the whole of the water supplies of the country was recommended by a Select Committee in 1878 and by a Joint Committee of the two Houses of Parliament in 1910. In view of the fact that the House in 1910 ordered a return, the Local Government Board sent out requests for information and received 3,000 separate statements, the facts in which were being tabulated. The return was now in the printers' hands, and would be issued shortly. The information received dealt with all sources of water, private as well as public.

Mr. Hills referred to the number of cases of death due to starvation. The President had told the House that there were ninety-eight such deaths last year, forty of which were in London. He hoped that the Board's inspectors who inquired into such deaths made adequate inquiries as to whether Poor Law relief had been refused.

Mr. Astor called attention to the administration of sanatorium benefit, which, he said, was at present chaotic, largely owing to the fault of the President of the Local Government Board. There had been enormous difficulties with regard to this benefit. The Departmental Committee which had been appointed to make recommendations reported in April, 1912, yet it was not until December that the President appointed the London County Council as the central organizing authority for London to deal with tuberculosis. He also strongly condemned the delay in issuing the order approving of the domiciliary treatment of tuberculous persons, and stated that the Departmental Committee over which he had presided fully intended the County Council to be the authority for London, and only pointed out that use could be made of some of the beds under the Metropolitan Asylums Board.

Mr. Cave referred to the unjust treatment by the Local Government Board of vaccination officers, who had suffered considerable loss owing to the operation of the Vaccination Exemption Act of 1907. These men had been promised some compensation, but they still suffered large loss. He suggested that a General Order should be issued by the President authorizing boards of guardians to grant compensation to these officers.

Mr. Lewis Haslam referred to the treatment of children under the Poor Law.

Mr. Chaplin called attention to the great increase in the number of exemptions from vaccination since the President of the Local Government Board had made it possible for a parent to obtain an exemption by making a statutory declaration. When the President took office in 1906, the exemptions were 52,000; in 1907, 57,000, and in 1908, 162,000; in 1909, 190,000; in 1910, 230,000; and in 1911, 248,000; and in 1912, 276,000. This startling increase, he pointed out, was equivalent to 31 per cent. of the births.

Mr. G. Toulmin appealed to the President of the Local Government Board to hasten the extinction of the system of retaining children in workhouses.

Mr. Burns, in reply, said he felt so strongly the representations which had been made in regard to rural water supplies that the Board had prepared a bill, which was presented last year; it was on the paper this year, and if its passage into law could be secured there was no reason why the immediately critical aspect of the question should not be solved. With reference to Poor Law children, a great deal had been done in the last three or four years to secure their removal from workhouses and institutions where institutional treatment was not so good as could be secured in cottage, scattered or other homes. Since June, 1910, 100 boards of guardians had provided for Poor Law children accommodation away from the workhouses, in or about which only 8,000 were now left. In 1912 there were only 221 children between the ages of 3 and 16 in workhouses in London. In 1913 there were only 165, and of these 165, 74 were in separate buildings, and the remainder only in workhouses temporarily, being on their way to other places. Mr. Burns said that these figures were an earnest of the promise he had made to the House that he would accelerate the disappearance of children altogether from all workhouses. It had been pointed out that in one year 98 persons died of starvation in the United Kingdom, 40 of whom were in London. No stone would be left unturned to prevent such tragedies, but it must be remembered that the victims did not apply to the guardians for relief, and that some of them had money in their possession when they died, varying from a sovereign to £8 or £10. Great progress had been made with regard to out-relief to children, especially when it was remembered that 40 per cent. of the pauperism was due to widowhood, desertion, or orphanhood. The department and its staff had attended to the matter of sanatoriums with such signal success that even Mr. Astor did not produce any instance of a patient entitled to sanatorium treatment who did not receive it. Months before July 26th, and during the time Mr. Astor's own committee was sitting, the Local Government Board, the London County Council, the Metropolitan Asylums Board, and all the other authorities had made arrangements in anticipation for sanatoriums being provided as from July 15th onwards. They had really done a great deal of devoted and able work in trying to provide sanatoriums. So far as the Local Government Board was concerned, the figures provided an answer to much of the idle criticism and factious talk with reference to sanatoriums. Since July last 208 sanatoriums with 7,500 beds had been provided, and 192 dispensaries which were attended by many thousands of people. Forty-nine county councils out of 62, 66 county boroughs out of 75, and 25 metropolitan borough councils had got into working provisional schemes for tuberculosis sanatoriums and dispensaries, and, speaking generally, there was a margin of beds over those who required them. On July 15th there were in London anything from 800 to 1,500 empty beds in the possession of the Metropolitan Asylums Board, and it would have been the grossest folly to have thrown upon the County Council the cost of providing surplus beds and sanatoriums. In England and Wales there were 1,400 vaccination officers, of whom only 100 gave the whole of their time to their duties. Grievances had been alleged in respect of 658, and of those 594 had received gratuities, increased fees, and other forms of compensation. Of the 100 whole-timers, 90 were in office before the passing of the Act of 1907. In respect of 70, there had been alleged grievances, and 68 of them had been given compensation. He had devoted a great deal of attention to speeding-up and accelerating housing in both rural and urban areas. It was said nothing had been done, but in

the two years ending March, 1912, under the new Act 66,000 houses had been made fit for occupation and nearly as many more had been made fit under the Public Health Act of 1891 through the local authorities being screwed up in recent years by the Local Government Board to do this work. No less than 72,000 representations as to unfit houses had been made in the same period, and in the last three years loans amounting to £800,000 had been sanctioned to rural and urban authorities by the Public Works Loans Commissioners for housing. When it was said that nothing was being done with regard to housing, the answer was the fact that in 1912 there were in existence 180,000 more houses of £15 annual value and under than there were in 1909.

The vote was agreed to by 255 votes to 178.

Mental Deficiency Bill in Grand Committee.

The Mental Deficency Bill came before Grand Committee B of the House of Commons on June 12th. Sir D. Brynmor Jones was in the chair, and the Home Secretary, assisted by Mr. Ellis Griffith, Under Secretary, was in charge of the bill. On Clause 1, which contains the definition of defectives under the four heads (*a*) idiots, (*b*) imbeciles, (*c*) feebleminded persons, (*d*) moral imbeciles, Mr. Martin moved to omit feebleminded persons defined in the bill as—

> Persons in whose case there exists from birth or from an early age mental defectiveness not amounting to imbecility yet so pronounced that they require care, supervision, and control, for their own protection or for the protection of others, or, in the case of children, are incapable of receiving proper benefits from the instruction in ordinary schools.

Mr. McKenna opposed the amendment on the ground that it struck at a vital principle of the bill. The subclause concerned only children who had been declared to be mentally defective by the local education authority, but a child between the ages of 7 and 21 could not be confined without appeal or at the sole discretion of the local authority, and no child could be interned for life on the decision of a single magistrate. Mr. E. Jones pointed out that any such child could only be put into an institution at the instance of the parent or guardian. After some further discussion, the amendment was negatived.

On the last paragraph of the clause, in which moral imbeciles were defined as

> persons who from an early age display some permanent mental defect with strong vicious or criminal propensities on which punishment has little or no deterrent effect,

an amendment was moved to strike out the words after "propensities," but Mr. McKenna said that the criminal propensity would be difficult to establish unless it manifested itself in some overt act. The desire was to save such persons from being punished for offences for which they had no moral responsibility, but to treat them humanely in homes instead of sending them to prison. The amendment was rejected by 19 to 3, several members declining to vote, and the clause was then agreed to.

On Clause 2, rendering defectives subject to be dealt with under the Act by being sent to or placed in an institution for defectives or placed under guardianship, Mr. Harris moved to omit the first subparagraph, which authorized the defective to be dealt with under the Act by being sent to an institution "at the instance of his parent, or guardian if he is an idiot or imbecile or under the age of 21." Mr. McKenna said that he thought that if a parent or guardian wished to bring the child under the operation of the bill it ought to be within his power to do so without having to apply to the court. The provision for the protection of the child in the later clauses were exceedingly strong, but he would be willing that Clause 3 should be amended so as to require the certificates of two medical practitioners.

At the second sitting of the Committee on June 17th the consideration of Clause 2 was resumed, and Mr. Martin moved to leave out the paragraph which brought within the scope of the Act a woman "who is in receipt of poor relief at the time of giving birth to an illegitimate child or when pregnant of such child." Mr. Ellis Griffith said that guardians in many parts of the country had asked that the bill should contain such a provision. Mr. Hills objected that the object was not to put a woman into a home because she was in poverty and her child was illegitimate, but because she was defective, and because it was likely that the child would be defective. Mr. Ellis Griffith undertook to reconsider the phraseology of the paragraph.

On the second part of the clause an amendment was agreed to altering the age at which notification might be made by the local education authority to the local authority under the Act to the age of 7 years; in the bill the age was 5. The subclause was also amended by leaving out the words "three months" in the following paragraph and making it apply to children about to be withdrawn from a special school:

> Who on or within three months before attaining the age of 16 are discharged from a special school or class, and in whose case the local education authority are of opinion that it would be to their benefit that they should be sent to an institution or placed under guardianship.

Sir Norman Helme moved an amendment providing that such notice should be given by the local education authority to the local authority in the case of any defective children over the age of 7 who needed permanent care, provided the consent of the parent or guardian was obtained. This amendment met with a good deal of support, but was opposed by the Home Secretary and defeated by 16 to 12. The clause was still under discussion when the Committee adjourned.

Mental Deficiency Bill (Scotland).—In reply to Major Hope, who referred to the increase of the Treasury grant for England and Wales for mentally defective children from £4 4s. to £6, and who inquired whether a similar increase of grant was to apply to Scotland, Mr. McKinnon Wood said that he could not at present give a definite answer, but that the matter was under consideration.

Grants to Reformatory and Industrial Schools.—Mr. King asked the Secretary of State for the Home Department what was the total amount paid from the Home Office votes for educational purposes in this country, indicating, in addition to the total amount, the sums paid in respect of reformatory and industrial schools, prison education, and all other educational purposes.—Mr. McKenna said the total sum paid towards the cost of reformatory and industrial schools in England and Wales in 1912–13 was £220,826. It was not possible to say how much of this sum was for maintenance and how much for education. The pay and allowances of the officers employed in prisons and Borstal institutions in teaching prisoners, including trade instructors, amounted to £14,500 a year.

Lead Poisoning.—In reply to Mr. Snowden, Mr. McKenna said that he was aware that the number of fatal cases of lead poisoning included in the annual returns for 1910–12 was twice as large as the number for the years 1902–4, but the Medical Inspector of Factories regarded this not as indicating an increase in the actual number of fatal cases, but as due to the recognition that diseases such as chronic interstitial nephritis and cerebral haemorrhage might be sequelae of lead poisoning, and also to the greater inclination to certify deaths of lead workers from associated diseases, such as phthisis, gastric ulcer, etc., as having been accelerated by lead poisoning. Better tests of the effect of administrative action for the prevention of lead poisoning would be a comparison of the number of cases in which death was due to acute lead poisoning, and in non-fatal cases a comparison of the proportion of severe as distinguished from slight cases. In 1910–12 the number of deaths due to acute lead poisoning was six only as compared with fourteen in 1902–4, and the percentage of severe cases 18.2 as compared with 30.4 in 1902–4.

Colour Vision Tests.—Mr. Lynch asked the President of the Board of Trade whether he could state how many officers of the mercantile marine who had previously passed the Board of Trade tests had failed in the tests of colour vision introduced on April 1st; and how many men had passed the wool test and failed with the lantern test, and vice versa.—Mr. Robertson said that the total number of officers in possession of certificates of competency who were examined in the above tests during the

period April 1st to May 31st was 409: Failed in lantern test only: Six certificated officers failed in both local and special examinations; two failed in local examinations, but special examinations had not yet been held. Failed in wool test only: None. Failed in both lantern and wool tests: Three certificated officers failed in both local and special examinations; one had failed in the local examination, but had not yet been specially examined. Thus nine certificated officers had failed to pass the new tests; and three having failed at local examinations were awaiting special examinations before a final decision was given.

The Dogs Bill.—Notice of a number of amendments to this bill has been given by Dr. Chapple, Sir Henry Craik, and Sir Philip Magnus. The Standing Committee A, to which the bill is remitted, was called for on Monday, June 16th. No quorum was obtained, and the consideration of the bill was adjourned till Wednesday, June 25th.

Bovine Tuberculosis and Johne's Disease.—Mr. C. Bathurst asked the President of the Board of Agriculture if he would state how, under the Tuberculosis Order of 1913, bovine tuberculosis with emaciation was being distinguished from Johne's disease in cases where the owner did not consent to the application of the tuberculin test; and how, if no outward symptoms of tuberculosis exist, cattle could be notified as giving tuberculous milk in the absence of the proposed machinery of the Milk and Dairies Bill, whereby the presence of the disease in milk could, after bacteriological analysis, be traced from the retailer's premises to those of the cattle owner and the particular cow which yielded it. The President of the Board of Agriculture, in reply, said that no case of difficulty in making a differential diagnosis between tuberculosis with emaciation and Johne's disease had been brought to his notice, but he was advised that the following method might be used for distinguishing the two diseases, namely, by clinical examination, and, if necessary, microscopic examination of scrapings of the mucous membrane of the rectum, or by microscopic and biological examination of the faeces. With regard to the latter part of the question, whilst it was, of course, the case that owners of cows might not be able to notify cases of cows giving tuberculous milk from clinical symptoms, local Acts were already in existence under which cases might be found and dealt with even before the machinery was made generally applicable by the passing of the Milk and Dairies Bill. Mr. Bathurst asked if it were not a fact that the machinery of the Tuberculosis Order, so far as tuberculous milk was concerned, would break down almost entirely in the event of the Milk and Dairies Bill not passing into law. Mr. Runciman replied that he could not admit that. It was true that if the Milk and Dairies Bill were not passed into law the regulations would not be generally applicable, but would be applicable only in the most important cases. In reply to a question by Mr. Bathurst, who inquired as to the number of notifications of tuberculosis of the udder, emaciation from tuberculosis, or giving tuberculous milk, as the result of the Tuberculosis Order of 1913, during the month of May, and whether it was not a fact that the notifications were confined to the counties of Yorkshire, Lancashire, Derbyshire, Cumberland, Somersetshire, and Wiltshire, Mr. Runciman said that the number of notifications had been as follows: In England, 504; in Wales, 13; in Scotland, 51. He also gave a list showing a large number of counties from which no notifications had been received—more numerous in Scotland than in England and Wales. London was amongst the counties named in England. In conclusion, Mr. Runciman added that he was making inquiries with a view to ascertain whether in the counties named, or any of them, there had been unreasonable delay in enforcing the Order.

The Bee Disease Bill and the Milk and Dairies Bills.—In reply to Mr. Charles Bathurst, who indicated the need for legislation on these matters, and inquired as to whether the Government proposed to pass these bills this session, the Prime Minister said that the Government would be glad to carry the Bee Disease and the Milk and Dairies Bills through this session, but, unless they could proceed as substantially uncontentious measures, he was afraid there was little prospect of this in the time at their disposal.

The House-fly Pest.—In reply to Mr. Charles Bathurst, the President of the Local Government Board said that, under the Public Health Acts, local authorities had powers with respect to the removal of refuse and for dealing with accumulations of manure and other offensive matters. They were also empowered to make by-laws relating to the deposit and removal of refuse matters, and by-laws of this kind were in force in many districts. The question of the relation between flies and disease had been frequently under the consideration of the Local Government Board, which had made and was continuing a series of investigations with regard to it. In the circular of August, 1911, to local authorities on the prevalence of epidemic diarrhoea amongst children, the Board emphasized the importance of prompt removal of stable and domestic refuse and the prevention of the accumulation of organic matters. He had reason to think that this circular led to much valuable work being done, and he was considering the question of issuing a further circular this summer.

Colonial Medical Officers.—Mr. Grant asked the Secretary of State for the Colonies how many district residents, assistant residents, and district doctors were married in the following comparatively unhealthy stations in British Central Africa: Port Herald, Chiromo, Limonde, Fort Johnston, Kotakota, Chinteche, and Karongo; and how many district residents, assistant residents, and district doctors were unmarried in the following comparatively healthy stations: Zomba, Chirazulu, Blantyre, Neno, Nehen, Dedza, Lilongar, Dowa, and Mzimba.—Mr. Harcourt replied that, according to the latest information, at the stations mentioned as unhealthy there were eight married and seven unmarried administrative and medical officers. At the stations mentioned as healthy there were ten unmarried and nine married officers of three classes. At two other healthy stations, Mlanje and Ngara, the two administrative officers and the medical officers were all married, and he was prepared without reserve to accept the classification of stations as healthy and unhealthy.

DR. W. GIBSON PARKER has published in *Public Health* (April, 1913) an interesting statistical inquiry into the relation between the "condition as to nutrition" of school children and the rate of infant mortality prevailing in the families from which they come. The children were classified with respect to nutrition as good, average, poor, and bad. After the children had been classified, the family record of births and deaths was obtained from each mother and the results analysed. It was found that the mortality per 1,000 under one was 56.1 in the class "good," 61.5 in the "average" class, and 97.5 in the "poor" and "bad" classes taken together. The author is careful to point out that these figures are not comparable with the rates of infant mortality generally employed since, *inter alia*, at least one child in each family must have survived to school age, but he holds that they support the belief that a high infant mortality is associated with a deterioration of health among the survivors. The facts here collected are worthy of attention, but the measurement of selective mortality, as has been pointed out by expert statisticians such as Yule and Snow, is a task of great difficulty. The problem is to study the after-history of two populations which have been subjected to different rates of infant mortality, *keeping the environmental conditions constant*. The words in italics reveal the source of the difficulty. Since in practice we are never likely to be provided with populations differing solely in respect of their infant mortality-rates, and the environmental conditions are constantly changing, it is necessary to have resort to statistical artifices of a very intricate kind, with the result that their interpretation is a matter of some uncertainty. We hope that Dr. Parker will return to this important point, he will find hints as to the pitfalls to be avoided in Yule's appendix to the Local Government Board Report (Supplement to the Report of the Board's Medical Officer, 1910, Cd. 5263), the memoirs of Snow (E. C. Snow, *The Intensity of Natural Selection in Man*, 1911 (Dulau), and *Biometrika*, 1913 (ix, 58 to 68), and Greenwood and Brown's study of infant mortality in Bavaria (Greenwood and Brown, *Journal of Hygiene*, 1912, xii, pp. 5 to 45).

Scotland.

[From our special correspondents.]

Lunacy in Scotland.

The fifty-fourth annual report of the General Board of Commissioners in Lunacy for Scotland was issued on June 10th. It states that exclusive of insane persons maintained at home by their natural guardians, there were on January 1st, 1913, in all 19,188 insane persons in Scotland. This number included the inmates of training schools for imbecile children and of the criminal lunatic department of Perth Prison. There was an increase of 154 in the total number of the insane, as compared with the previous year (1911). The Commissioners were in favour of a change in the law with regard to the admission of voluntary patients; it might take the form that a person could be received into and kept in an asylum for three days on his own written application to the superintendent, provided the sanction of the Board were at once applied for, and that no voluntary boarder were retained for a longer period than three days without such sanction. The recovery-rates from insanity were not quite so good as previous years, a fact which might be ascribed in part to the increased use of observation wards connected with the parochial hospitals of several large parishes which received persons suffering from passing attacks of mental disorder who would otherwise have been for short periods in asylums; but other causes were the accumulation of chronic cases, and the development of nursing and the improved means of hospital care in asylums which had led to their being more freely used for the reception of patients whose age and whose mental and physical condition were such as to preclude hope of recovery. The death-rate of both class of patients (private and parochial) was 9.8 per cent., and was, therefore, higher than it had been for many years; it was 8.7 in 1911. The escapes numbered 143; of these 65 were brought back within twenty-four hours, 35 within a week, and 21 after a week. This apparently leaves 22 unaccounted for. The total expenditure for the maintenance of pauper lunatics for 1911–12 was £427,495 as compared with £415,694 in the previous year, and the total average cost per patient was £26 4s. 8d.

Overcrowded Houses in Edinburgh.

Mr. David Rutherford, the chief sanitary inspector, in the annual report of the sanitary department of the City of Edinburgh for the year 1912, states that there are now within the city 7,354 ticketed houses which are regularly inspected; 108 were found overcrowded, 695 required to have walls and ceilings cleansed, and in 334 cases the floors and bedding were found to be in a dirty condition. Continued visits are paid to houses, especially in the poorer districts, in which cases of phthisis have been notified as existing.

Edinburgh Medical Missionary Society.

The directors of the Edinburgh Medical Missionary Society gave a reception for the medical missionaries (former students of the society) now at home on furlough from the foreign field in the Green Café, Edinburgh, on the evening of June 13th. Emeritus Professor Crum Brown, the President of the Society, was in the chair for the first part of the evening, and Dr. J. W. Ballantyne, one of the vice-presidents, for the later part. There was a large gathering of the directors and of their friends, as well as of the present students of the society; and an attractive musical programme was carried through. Six of the medical missionaries present gave brief addresses. Dr. Lechmere Taylor, of the Church of Scotland Mission in the Punjab, spoke of medical work in the north of India; Dr. E. H. Edwards, formerly of the Baptist Missionary Society in Tai-yuen-fu, spoke of the calls China had made in the past thirteen years to the peoples of Europe; Dr. Nina Beath, of the English Presbyterian Church Mission in Swatow, spoke of the way in which medical work opened the hearts of the Chinese to western ideas; Dr. E. Mackenzie, of the Presbyterian Church of Victoria's mission in Santo, drew a picture of what medicine had done for the savages of the New Hebrides; Dr. J. W. Pell, of the Wesleyan Missionary Society's station at Changsha in China, spoke of some of the different ways in which medicine opened up the path for Christian teaching; and Dr. J. Davidson, of the London Missionary Society's station at Neyoor, Travancore, told something of the native medical evangelists there. All the speakers referred very warmly to the benefit they had derived from the society during their college and university days in Edinburgh. Among the other medical missionaries present were Dr. S. Osborn, who is going to Rhodesia, and Dr. G. Ap Thomas, who is to join Dr. Davidson in Travancore. Dr. C. D. Walker had started for his station in Paraguay, South America, otherwise he also would have been among the guests of the evening.

Epileptic Colony of the Glasgow Parish Council.

The first epileptic home erected under Poor Law auspices in Scotland was opened last week. The question how best to deal with sane epileptics chargeable to the rates has for several years come up periodically before the Glasgow Parish Council, but owing chiefly to the cost no permanent steps were taken, and the epileptics were accommodated in existing parochial institutions and in part were kept at home. The unsatisfactory results of indoor treatment and the increasing number of indoor poor forced the question to the front. With the consent of the Local Government Board a deputation visited existing institutions in England, and afterwards drew up a scheme for the erection of a special home at East Muckcroft, near Chryston. This was adopted, and six villa blocks, each accommodating fifty patients, with the necessary administrative buildings, laundry, recreation-hall, and tradesmen's workshops, and houses for the medical superintendent, attendants, and workmen were provided at the cost of £45,000 (£150 a bed). If the cost of the villa blocks alone is taken, the cost is only £70 a bed, which is even cheaper than the cost of £80 a bed of the similar colony at Monyhull, Birmingham. The Glasgow villas are one-storied brick buildings, containing day-rooms, dining-room, bathroom and lavatory accommodation, with kitchen and necessary offices. The dormitories are detached from the rest of the buildings. Each block has a separate heating boiler.

At the opening ceremony the Chairman of the Parish Council said it was intended to be more of the nature of a home than a hospital, and equipped with the view of relieving as much as possible the distressing accompaniments of the disease. It was proposed that the patients should lead as normal a life as possible, not the depressing, languid, wearisome drag so often seen in asylums. The colony was intended for those who were able to do something for themselves, and engage in work of some description which would in part at least help towards their maintenance. The colony had accommodation for 150 men and 150 women, and there were already 86 patients in residence. There were over 300 other epileptics of whom fully 200 were in mental institutions. Many of these reached a state of health which rendered them fitted for the greater freedom of the colony and as occasion offered they would be transferred to it.

Ireland.

[From our special correspondents.]

Royal Medical Benevolent Fund.

The annual meeting of the Royal Medical Benevolent Fund Society of Ireland was held last week in the Royal College of Physicians, when the President of the College, Dr. Charles E. Fitzgerald, presided, and there was a large attendance. According to the report, the number of applicants was larger than usual last year, and the amount given in grants was greater than the average, yet to many of the recipients the aid given was far short of their urgent requirements. The total number of applications considered during the year was 106, and the total amount of grants recommended since the last distribution was £1,444 10s.; there was a decrease of £141 1s. 3d. on the income of the preceding year.

Dental Clinic in Belfast.

Two months ago a dental clinic was opened in Belfast with the definite object of providing proper facilities for

treating the teeth of children in national schools; it was founded by a committee of the Children's Aid Society, and has been managed by it, but the scope and nature of the clinic's work have really been defined by the Commissioners of National Education, whose approval has been given. Local dentists have volunteered their services, which the Commissioners have consented to regard as equivalent to a fixed financial contribution, and have accordingly guaranteed an equal sum to help to cover working expenses. The local panel now contains eighteen dentists. During the first seven weeks one of the staff examined several hundred children of four schools, and of these 172 were sent to the clinic for dental treatment. Only children between 6 and 10 years of age have been dealt with; 129 permanent teeth have been filled; on alternate Mondays those cases requiring anaesthetics are treated; and a medical man has kindly offered to act as honorary anaesthetist. A trained nurse is in attendance. The local branch of the Dental Association has throughout given its approval and support; and the Secretary of the Children's Aid Society, Rev. W. G. Anderson, has made himself responsible for the registration of the cases and the general management of the clinic. Professor Powicke, Queen's University, Belfast, has brought the undertaking before the public, and contributed these details to the press. The preventive effect such work affords in disease should make a powerful appeal to all citizens, and enlist their help and sympathy.

Health of Belfast.

The Medical Superintendent Officer of Health reported to the monthly meeting of the City Council on June 2nd that scarlatina was still very prevalent; 170 cases had been notified during the month; in one district many of the cases were traced to a dairy, and after the necessary precautions were taken, the numbers fell. He urged that medical advice should be sought, even in the mildest cases. The number of cases of typhoid fever notified was 21; a considerable number had previously eaten shellfish, gathered on the foreshores of the lough, a habit against which grave warnings had been issued from time to time.

The Children's Act Committee brought forward the question of school accommodation, and its chairman stated that, in face of the report of the inability of some 10,000 children to get admission to the elementary schools from lack of room, an effort must be made to remedy the evil. Most medical men will remember the revelations of the late Dr. A. McKeown in the matter. Belfast is justly proud of many of its institutions, but elementary school accommodation is popularly considered one of its disgraces, and there seems to be much truth in the accusation.

Treatment of Tuberculosis in Cork.

At a meeting of the Committee of Management of the Cork Joint Hospital Board, on June 7th, it was proposed to recommend the county councils of the city and county of Cork to take over the management of the sanatorium at Heatherside from the Joint Hospital Board on receiving from the Local Government Board the sums of £8,621 16s. 7d. in respect of Cork County, £2,095 14s. 10d. for Cork Borough, or a total of £10,717 11s. 5d., with a subsequent recoupment of their share of the £25,000 deducted for other purposes from the total grant. By the Tuberculosis Act of 1913 the Conjoint Committee were enabled to do what was proposed and thus form a new body which would take over the management of the sanatorium. The further question, whether dispensaries should be established, was left open.

Annual Meeting of Irish Medical Association.

The annual general meeting of the members of the Irish Medical Association was held in the Royal College of Surgeons on Wednesday, June 11th, when Dr. J. B. Story, the newly-elected President, took the chair. The seventy-fourth annual report stated that the National Insurance Act, in its application to Ireland, had engaged the attention of the Council more than any previous legislation. At its annual meeting in Cork this Association arranged the general meeting of all medical practitioners, held on June 30th, 1911. At that meeting a Conjoint Committee of the British Medical Association and Irish Medical Association was formed. In June, 1911, a meeting of the delegates was held, when the Conjoint Committee was reconstituted to consist of nineteen members of the Irish Medical Association and a corresponding number of the British Medical Association, with representatives from the licensing bodies, colleges, and four provinces. Numerous meetings of the Committee had been held, and important work had been done. While matters affecting the Act generally were referred to the Conjoint Committee, the Council of the Irish Medical Association, through its Committee, advised members on various questions arising from time to time.

Dr. R. Marlay Blake (Dundalk) moved:

> That the representatives of the Irish Medical Association on the Conjoint Committee be called upon to resign their positions on that Committee.

He thought that the interests of the members of the Irish Medical Association had been betrayed by the Conjoint Committee when the latter advised the adoption of the panel system for certification as outlined by the Insurance Commissioners.

Dr. Callaghan (Galway), who seconded the motion, said that the Conjoint Committee had not the confidence of the profession. The Irish Medical Association had always represented the rural practitioners, and should dissociate itself entirely from the British Medical Association, which mostly represented the city practitioners.

Dr. Donnelly said the actual membership of the Irish Medical Association was 673, and on credible authority he learnt that there were in Ireland 800 members of the British Medical Association. There should, in his opinion, be no antagonism between the associations. When the Insurance Act was on the stocks it was the Irish Medical Association that banded the doctors together, and the Conjoint Committee was of no advantage to the doctors, but the contrary. Dr. Olpherts stated that it was entirely incorrect to say that Down was a panel county.

The resolution was then put to the meeting and carried with almost complete unanimity. The president said that he would rule that this resolution would prohibit the Executive Council from allocating any further funds to the Conjoint Committee.

The following resolution was passed:

> That all members of the Irish Medical Association who have gone on the panel in their areas, and outside their areas to certify for insured patients attended by non-panel doctors, be called upon to resign their membership of the Association.

A resolution expressing emphatic disapproval of doctors joining the panels, and calling on those who had joined to withdraw as soon as they could legally do so, was also passed.

The annual banquet was held in the Royal College of Surgeons in the evening, Dr. J. B. Story in the chair. On Friday afternoon the President and Mrs. Story entertained the members by an afternoon party in the Zoological Gardens.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

District Nursing.

A conference on the subject of district nursing in London was held at the offices of the Local Government Board on June 14th. In opening the conference, Mr. John Burns said that it was one of a series of efforts made by the Local Government Board to link up the different agents, public and private, working for the benefit of the poor. Hitherto the best possible results had not been obtained from district nursing, partly because of lack of co-ordination, while a further reason for holding a conference was the alteration in the problem introduced by recent legislation. For instance, one outcome of the medical inspection of school children was a need for the visiting of children in their own houses. Old Age Pensions Act and the National Insurance Act had also affected the problem. Neither the State nor the rates could do everything for the poor, nor was it desirable that they should. What was needed was the guidance and stimulation of the virtue the poor exhibited in helping

each other. Whatever was, or could be, officially done left plenty of room for the services of kindly people who were willing to devote their energies to district nursing. There were already, he was informed, 400 trained women engaged in work of this order, at a cost of not more than £30,000. It would be well if all public expenditure brought about an equally valuable return. The best work of nurses was not necessarily either medical or surgical; it was their human, sisterly, neighbourly qualities which were most valuable. They went into the homes of the poor and talked not at them, but to them, and by their kindly advice and persuasion brought about great changes for the better. Still, to get the best possible results, unification of aim and co-ordination of effort were necessary, though there should be no interference with the domestic management or independence of philanthropic associations. Some recent efforts at co-ordination in other directions proved their value. The drop in infant mortality from 145 to 90 deaths per 1,000 registered births was largely due to the Notification of Births Act having concentrated social and philanthropic agencies on the working-class mother and child at a very critical period, while the co-ordination of agencies for dealing with London vagrants had, besides removing the nightly blot on the Embankment, led to the closing of 33 per cent. of the casual wards in London, and to the reduction of casual pauperism from 1,300 to below 400. The discussion which followed this speech ended in the passage of three resolutions. The first asserted the desirability of all bodies concerned in district nursing in the metropolis being brought into closer co-ordination in order to meet the demand for nursing on systematic and co-operative lines; the second suggested the selection of ten persons to form a provisional committee to prepare and promote a scheme for carrying out the first resolution and to report further on the subject, and the third named the following persons as members of such committee: Mr. A. Ellis (Metropolitan Federation of Queen's Nursing Association), Miss Hughes (Queen Victoria's Jubilee Institute for Nurses), Miss Puxley (General Secretary of the Ranyard Nurses), Miss C. Gregory (Southwark, Newington, and Walworth District Nursing Association), Sir Arthur Downes, M.D. (Local Government Board), Mr. Warburg (London County Council), Mr. J. A. Dawes (London Insurance Committee), Canon Curtis (Wandsworth Board of Guardians), Mr. F. Briant (Lambeth Board of Guardians), and Mr. C. S. Loch (Charity Organization Society).

Australia.

[FROM OUR SPECIAL CORRESPONDENT.]

Royal Prince Alfred Hospital, Sydney.

At the annual meeting of the subscribers to the Royal Prince Alfred Hospital Professor Anderson Stuart, the Chairman of the Board of Directors, presented the annual report. It stated that the total number of in-patients during the year was 7,115. As the available number of beds in the hospital was 392, the daily average number of patients was 386, and the mean residence of patients in days was 21.06. The rate of mortality per cent. for all cases under treatment (excluding 96 deaths which occurred in patients within twenty-four hours after admission) was 5.07. The number of attendances in casualty and out-patient departments was 69,082. In the year 1883, when the hospital was first opened, the number of operations was 147, the percentage of the number of operations to admissions being 13.75. In 1912 the number of operations was 4,690, being 69.15 per cent. of the number of patients admitted. While there had been an all-round increase in the amount of work, the increase in the pathological, *x*-ray, and medical gymnastics departments was specially marked.

The question of providing increased accommodation for the treatment of gastro-enteritis amongst infants has been under consideration during the past year. At present comparatively few cases of this disease can be accepted into the wards, but it is believed that if there were suitable accommodation for open-air treatment the high rate of mortality now prevailing would be much reduced. A scheme for establishing an annexe to the children's ward for the special treatment of these cases is now under consideration by the board. As the work of the pathological department has increased so much, the board, on the recommendation of the honorary medical staff, decided to appoint a chief resident pathologist, who, under the professor of pathology, would be a more or less permanent executive head of the department. Post-graduate work has also been under consideration for some time past. Recently a memorandum on the subject has been presented by Professor Anderson Stuart, Dean of the Faculty of Medicine, to the Senate of the University, and the matter is to be considered by a committee of representatives of the hospital board and the Senate.

During the year the number of students attending the Prince Alfred Hospital practice was again higher than during the previous year, and this showed that a large proportion of the students of the medical school desired to obtain their practical and clinical experience at this hospital. Considerable alterations have been made in the hospital buildings. The most important of these has been the erection of a large addition to the nurses' home. This consists of a brick building of three stories, and will provide over 200 bedrooms. The estimated cost of this building is £25,000, of which £8,000 was contributed by the board of directors and the balance by the Government. The net result of the year's operations was a deficiency of £1,412 2s. 7d. on the working account, while the Endowment Account showed a net gain of £538 3s. 8d. It was estimated that the ordinary expenditure of the hospital for the current year would be nearly £44,000, which should just be covered by the revenue to be expected from all sources.

Medical Fitness of Cadets in Training.

The Minister for Defence has published some interesting information in regard to the work carried out in connexion with the universal training clauses of the Commonwealth Defence Act. Up to February 28th, 1913, the total number of junior cadets examined (boys of from 12 to 14 years of age attending primary schools) was 45,248. The number found medically fit was 44,079; the percentage found fit was thus 97.4. The number found unfit or temporarily unfit was 1,169, or 2.6 per cent. The total registrations of senior cadets in training areas was 174,766. The total medically examined was 102,213; total medically fit, 93,483, or 91.5 per cent.; number temporarily unfit, 2,995, or 2.9 per cent.; number unfit, 5,737, or 5.6 per cent. The number of total exemptions granted in training areas was 58,582; number remaining to be medically examined or exempt, 22,701; number liable for training, 90,808; total number actually in training, 87,847. Exemption from training is given to all those who reside outside a training area, but they are nevertheless compelled to register. The total registrations of those cadets who reach the age of 18 years this year, and who on June 1st next will have to pass into the Citizens Forces, numbered 38,604; the total medically examined, 2,081; number medically fit, 1,521 (73.1 per cent.); number conditionally fit, 156 (7.5 per cent.); number temporarily unfit, 113 (5.4 per cent.); number unfit, 291 (14 per cent.); total exemptions granted in training areas, 16,481; number remaining to be medically examined or exempt, 20,446.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

Foot and Mouth Disease.

The small scientific commission, regarding the foot and mouth disease, which visited India during the cold weather, has now gone home, and the results of their mission will be communicated to the Board of Agriculture. It is feared that their experience will not be of much use in dealing with the disease at home, as the characters of the malady differ materially in the two countries. In Great Britain the disease is virulent and often fatal, but in India it is not so.

Plague Vaccine.

With reference to the disinterment in a recent libel action of the alleged facts of the accident with plague vaccine in

1902, and the false argument unsuccessfully based thereon, it may be pointed out that from 1904 to the present date, 4,919,345 doses of vaccine have been issued in India, and although searching inquiries are always instituted regarding the action of the vaccine, there has not been a single verified case of any serious ill effects following its use.

BOMBAY MILK SUPPLY.

A scheme has been adopted for bringing milk into Bombay City from healthy dairy farms established in the surrounding country districts. The milk problem has long been a great difficulty to the Corporation. Milch-cattle stables are dumped down all over the town, and are often in most insanitary proximity to dwelling houses and other buildings which make undesirable close neighbours. The Corporation has recently maintained a steady effort to push these stables into more open localities on the outskirts of the city, and to ensure the observance of sanitary rules in each place, but there are obviously limitations in the power of compulsion in the matter.

Special Correspondence.

PARIS.

Treatment of Appendicitis.—Operation of Pericardiolysis.

A DISCUSSION on the treatment of appendicitis, in which several leading French surgeons took part, was held at a recent meeting of the Surgical Society. M. Jacob, who said that he had had the opportunity of following many cases in soldiers from the very beginning of the attack, stated that during the past three years he had operated on 148 cases—30 in the acute stage, with 28 recoveries and 2 deaths. The two fatal cases were not operated upon till the fourth day. He held that the commencement of gangrene might be diagnosed from the intensity of the pain. When the pain was localized in the right iliac fossa and very acute, commencing perforation was to be dreaded, especially when the attack was not the first. M. Reynier said that if operation were delayed for forty-eight hours the prognosis became much less favourable. In cases presenting the peritoneal facies, black vomiting, and pulse of 140, temperature of about 101°, washing out of the stomach and bowel frequently ameliorated the general condition and tided over the attack. After four days the operation of appendectomy might be performed without undue risk. M. Lenormant reported a mortality of 30 per cent. in bad cases upon which operation was performed. If the operation were done within the first forty-eight hours the prognosis was good. He had had only 1 death in 20 cases. Among 15 cases in which the operation had taken place after forty-eight hours there were 5 deaths. M. Potherat advocated surgical intervention in all cases. Ice, he said, merely acted as an anodyne, and did not influence the inflammation existing in the appendix itself, and certainly could not affect gangrene. M. Hartmann's conclusions were summarized as follows: (1) If the case is acute, operate at once; (2) if subacute, wait twelve hours, and if after twelve hours the temperature has not fallen below 101°, operate. In 196 cases he had had 29 deaths (13 per cent.). The operation was performed within twelve hours in 12 cases, with no deaths; within thirty-six hours in 13 cases, with 2 deaths; and after fourteen days in 13 cases, with 10 deaths.

Dr. Delagénière has reported to the Academy of Medicine the results obtained by pericardiolysis or removal of the anterior portion of the pericardium in its totality; it was designed to give both the ventricles and the auricles and great vessels freer action. The operation had been performed thirty-eight times, with thirty-one recoveries and six bad results, all in adherent pericardium. He related a case of a woman, aged 28, complaining of palpitations, cyanosis, and oedema of the limbs. After operation all these symptoms disappeared, and the patient had been in good health for the past two years. The operation consisted in the removal of part of the sternum and ribs covering the pericardium, and the freeing of the pericardium in its entire extent anteriorly.

BERLIN.

Friedmann's Tuberculin. — The Serum Diagnosis of Pregnancy.—The Treatment of Carcinoma Uteri with X Rays and Mesothorium.

THE report by Westenhofer, Prosector at the Pathological Institute of the Charité Hospital, made to the last meeting of the Berlin Medical Society, of his *post-mortem* findings in a case that had died of haemoptysis after a course of injections by Friedmann produced a considerable sensation. There were numerous pulmonary cavities, and a generalized miliary tuberculosis; but this is not the worst, for in the gluteal region, at the site of the infection, and in the musculature, where tuberculous deposits are exceedingly rare, there was a large focus containing giant cell systems and tubercle bacilli which could not be definitely classed either among the human or cold-blooded varieties. In the course of his remarks the speaker regretted that Dr. Friedmann had not as yet fulfilled his promise to the society to publish his culture methods in detail—a course, which he maintained, could only damage the high esteem in which German scientific research was held abroad. He was followed by Professor Schwalbe, who drew the society's attention to an official report of the Health Department at Washington, in which it was definitely stated that the patients treated by Friedmann in America had not been cured. The well-known bacteriologist—Frau Dr. Rabinowitsch—showed the society a pure culture of Friedmann's turtle tubercle bacillus recently sent to her from America. It had been obtained from an abscess produced by inoculation in a female patient in Rhode Island. Besides the tubercle bacillus there was cultivated from it a non-acid-fast bacterium which might possibly be designed to act in combination with the other. In her opinion the first named very closely resembled a bacillus isolated from the carp by Dubard fifteen years ago. Friedmann's bacillus grows best at room temperature and can be subcultivated on all the usual media, whilst microscopically and by staining methods it cannot be differentiated from the recognized "reptilian" tubercle bacillus. She reminded her hearers that Küster, Möller, and Edwin Klebs had fruitlessly tried to immunize animals some years ago with such bacilli, and mentioned that she herself had also failed. Piorkowski, a former assistant of Friedmann's, who had formerly cultivated turtle tubercle bacilli for him, has placed living cultures of this bacillus at the service of his colleagues in Berlin and elsewhere. At this meeting he stated that he had received favourable reports from certain sources, whilst other authorities had been unable to send him any positive observations. Friedmann found his only firm supporter in the person of Dr. Schleich, of local anaesthesia fame, who from the beginning has publicly stated his belief both in the man and the method. Schleich stated again that most amazing results had been obtained by Friedmann, and called upon the society to appoint a commission from among its members to examine into and report on his alleged cures.

At a Gynaecological Congress held at Halle recently, R. Freund and Brahm reported on 160 cases successfully tested by Aberhalden's method.* The practical value of the test was emphasized by Rübsamen, who in 7 cases of suspected tubal pregnancy obtained a positive indication four times and a negative thrice—results which were confirmed subsequently on the operating table. Rübsamen, after applying the test in 100 cases without a single failure, is of opinion that it is infallible. This speaker was followed by Schäfer (Berlin) and Lichtenstein (Leipzig), whose reports were likewise favourable to the method; whilst in an article in the *Münchener mediz. Wochenschr.* (June 10th) Maccacruni reports correct results in 85 cases, among which were four doubtful tubal pregnancies, in which the diagnosis was made from the serum and afterwards confirmed by the operation. Schiff, of the Physiological Institute in Halle, writes in the same journal that he correctly diagnosed the presence or absence of pregnancy in every one of 49 cases whose serum reached his laboratory.

At a recent meeting of the Berliner medizinische Gesellschaft, Professor Bumm, the Director of the

* Some particulars of this method were given in a leading article on biological reactions in pregnancy published in the JOURNAL on March 29th, 1913, p. 677.

University Frauenklinik, opened a discussion, and related his experiences with *x* rays and mesothorium in the treatment of malignant disease of the uterus. His own results indicated a therapeutic advance. It had been clearly demonstrated that normal tissue (especially the uterine and vaginal mucous membrane) would tolerate much harder rays than had hitherto been used, and that larger doses, provided they were filtered, could be given without ill effects in uterine disease. Moreover mesothorium rendered it possible to utilize radio-activity in cavities inaccessible to *x* rays. Professor Bumm reported on 12 cases of carcinoma, among which were some implicating the ureter or the vagina. Several of these were apparently cured by the combined irradiation alone; others, previously classed as surgically hopeless, were brought into the operable category, and in every case where pain, suppuration, and haemorrhage had rendered the patient's life a misery to her, these distressing symptoms were relieved. The result was due, not only to the rapid vacuolization and subsequent destruction of the individual cancer cells, but also to the hyaline degeneration and sclerosis of the newly formed connective tissue cells. The depth of penetration of hard rays, and the question of their action, if any, on metastatic deposits in the vicinity, and in the lymph glands, was, Professor Bumm said, as yet undetermined, but he maintained his opinion that in rapidly growing cancer, especially in young people, complete surgical removal of the growth and the glands offered the best chance of cure, but he was moved to advocate after-treatment with *x* rays and mesothorium, a method he had now adopted in every case of carcinoma uteri operated on in his own clinic. In cancer of the vagina, the urethra, and the external genitalia, and in the slowly growing cervix cases in elderly women he now placed considerable reliance on radiotherapy alone, claiming for the method that the clinical and functional results were superior to the surgical, whilst in all inoperable and recurrent cases it was the method of choice. Professor Franz, of the Charité Clinic, in discussing Bumm's paper, said that he could not accept the view that the use of mesothorium was the correct treatment for early carcinoma of the portio vaginalis. The records of operation on that condition showed a lasting cure of 50 per cent., whilst there were no means of determining, apart from operation, how deeply the growth might have extended from the visible ulcer. There was, he said, no doubt, on the other hand, that mesothorium was exceedingly useful in alleviating suppuration previous to operation, and sometimes in converting an inoperable into a comparatively easy case. The next speaker, Professor Rotter, said that during nine months he had in an inoperable case of carcinoma *coli* frequently injected, intravenously, 1½ to 2 million mesothorium units in solution. The matted growth had completely disappeared locally, although cancer nodules had subsequently recurred in the artificial abdominal opening and round the anal canal. The results of Hirschfeld and Meidner, who are conducting experiments on men and animals with thorium X injections at the Cancer Research Institute at the Charité (*Zeitschrift für klin. Mediz.*, June 11th), do not, however, support Rotter's single success. In 10 cases so treated they could not find that thorium solutions, although they were well borne, had any effect whatever. In a case of sarcoma slight temporary benefit was noted.

BUDAPEST.

Death of Professor Korányi.—Election of the Hungarian Committee of the International Medical Congress.—International Prize for Essay on Trachoma.—Pensions for Hungarian Doctors.—A New Medical Periodical.

THE death of Professor Frederic Korányi, the pride of the University of Budapest, is keenly regretted by the medical profession in Hungary. Korányi, who was a very energetic and hard-working man, and who had enjoyed excellent health during the whole of his long life, was in his 85th year at the time of his death, which occurred from heart failure on May 19th. Korányi had a very eventful career. Born in 1828 at Nagykállo in Hungary, he studied medicine at the University of Budapest, and at the age of 20 acted as military assistant-surgeon during the "War of Liberty" in 1848. In 1851 he graduated as doctor of medicine, and in the same year became surgical clerk to Professor Schuh, in Vienna. In 1852 he settled in his birthplace, Nagykállo, as a general practitioner, and in 1863 was appointed chief physician to the county hospital. His name soon became known, and two years later he was appointed lecturer on nervous disorders in the University of Budapest. In 1865 he was also appointed physician-in-ordinary to the city typhoid hospital, and in the following year the wards at the City Hospital destined for patients suffering from diseases of the nerves were placed under his care. In 1866 he became chief physician to the cholera wards at the Ludoviceum (the cadet school) and also professor of clinical medicine in the university. Korányi's work was recognized by the King, who in 1876 conferred upon him the title of "Advisor to the King," whilst in 1881 he became a member of the Order of the Iron Crown. He received a patent of nobility in 1884, which enabled him to place the prefix "de" or "von" before his name, and in 1891 became a member of the Upper House. He had already been nominated Rector of the university in 1886; and in 1892 he was elected President of the National Public Hygiene Committee; in 1894 he was President of the Hygienic Section of the International Hygienic and Demographic Congress; and in 1898 President of the National Public Hygiene Committee. He was also a member of the Hungarian Academy of Sciences and of the London International Investigation Committee; and in 1909 the King conferred rank corresponding to a baronetcy upon him and his heirs. After forty-three years spent in incessant work and in active warfare against the spread of tuberculosis in Hungary, Korányi resigned his chair last year in order to devote his whole time and energy to the reform of public hygiene. His name will always be remembered in his own country as being that of the first Hungarian doctor who was ever asked to contribute to foreign medical journals; and it was largely due to his writings that Hungarian medicine, hitherto little known to the rest of Europe, received the recognition it deserved. Korányi was a contributor to the Billroth Pitha *Encyclopaedia*, and compiled the five volumes of *Hungarian Clinical Medicine* besides writing scientific articles for Hungarian and foreign medical papers which aroused great interest. He also lectured constantly at the Academy of Sciences, whilst at the Wiesbaden Congress he was the head of the Pneumonia Section. His chief monographs deal with the position of the spleen; syphilis of the internal organs; nerve disease as observed in the Hospital of St. Roch; the diagnosis of diseases of the heart; combined infection from malaria and typhoid; the influenza epidemic of 1892; the arrangement and organization of a modern hospital. Korányi's funeral took place on May 21st. His body lay in state on its bier in the Great Hall of the University, and was followed to the grave by an immense crowd, in which almost every class of society was represented.

The Hungarian Committee of the International Medical Congress, whose members have just been elected, is working hard to promote the success of the congress by inducing as many Hungarian doctors as possible to take part in it. Prospectuses have been sent out containing full information as to travelling and accommodation in London, as well as details concerning excursions in various parts of England; and evening classes have been formed where intending members may take a course of lessons in the English language. The deputies sent to represent the Government at the congress have already been appointed, and Professor Emile de Grosz, who has thrown himself heart and soul into the work, has been nominated president of the committee, whose offices are at 39, Mária utcza VIII, Budapest.

The offer made some time ago by the Minister of Public Hygiene of a prize for the best essay on trachoma has had very satisfactory results, for a large number of excellent monographs have been received from all parts of Europe and America. The merits of these essays are to be judged by a committee of three—namely, Emile de Grosz, professor of ophthalmology in the University of Budapest, Professor Nuttall of Cambridge, and Professor Kolle, of Berne.

The "Pension Bill," which provides pensions for doctors after they have been in practice for a certain number of years, has been before the Hungarian Parliament since

1907, and ought to have come into force on November 1st, 1909. The long delay is over at last, however, and the bill, which was passed last April, is to come into force this year, when it will doubtless bring relief to the widows and orphans of many medical men. The pensions being granted by the State, a small percentage will be deducted from doctors' salaries during their term of service. Five years' service will render a doctor eligible for a pension, which will increase by 10 per cent. for every additional five years, whilst after thirty-five years' service he is entitled to retire on full pay. An interesting discussion on the question of pensions for medical men was opened in the Hungarian House of Commons by Sándor János, who laid stress upon the fact that in spite of the increase in the salaries of parish doctors granted by a bill passed in 1908, there are still more than 400 parishes in Hungary where there is no doctor. Moreover, the conditions of life in some of these parishes are so intolerable that, although the Minister of Public Health has granted a still further increase of salary, no candidates can be found to apply for the posts. On the other hand, there are 1,600 doctors (25 per cent. of the total number of medical men in Hungary) in Budapest alone, because, as the speaker pointed out, doctors prefer to lead a precarious existence in the towns rather than apply for a post in a country place where the bad housing, bad roads, defective sanitation, and heavy work disable them before their time and cause them to leave their families in complete destitution. It is by no means an uncommon occurrence for a parish doctor to be buried at the expense of his colleagues, whilst his widow is forced to earn her living as a domestic servant or assistant in a shop, facts which do not redound to the credit of a country that spends millions on its army whilst leaving the pioneers of science and culture in want. At the time of writing, however, the bill has been passed, and in a short time the State pensions will be enjoyed by hundreds of medical men.

The first number of a new medical periodical, the *International Zeitschrift für aerztliche Psychoanalyse*, has just been issued under the joint editorship of Dr. Sandor Ferenczi of Budapest, a favourite pupil of Professor Freund of Vienna, and Dr. Otto Rank, the Vienna neurologist. The Hungarian editor is an ardent disciple of Freund, and has made many converts by his work on "Lélekelemzès" ("The Analysis of the Soul"). The list of contributors to the first number, which contains a large amount of very interesting matter, includes the names of men in almost every country in Europe. The periodical, which is written in German, is published in Vienna by Hugo Heller and Co., the cost of subscription being 21.60 kronen, or about £1 in English money.

A COMMISSION composed of Dr. R. P. Strong, Professor of Tropical Medicine, Dr. E. E. Tyzzer, Director of the Harvard Cancer Commission, and Dr. A. T. Brues, sailed from New York a short time ago for a five months' tour of investigation on behalf of the department of tropical medicine of Harvard. The main object of the expedition, according to the *Journal of the American Medical Association*, is to obtain material and specimens for the department of Tropical Medicine at Harvard, and Guayaquil, Ecuador, which is a hotbed of tropical diseases, has been selected as the scene of operation. The expedition will also study verruca peruana.

A COMMITTEE of the American Institute of Homoeopathy has, according to the *Medical Record*, sent a communication to the American Medical Association asking on behalf of the homoeopathic physicians of the United States for a joint investigation of the scientific merits of the method of drug relation expressed by the formula *similia similibus curentur*. It is suggested that the American Medical Association shall appoint a committee of five to meet a like committee from the Institute of Homoeopathy to discuss this subject with a view of attempting a demonstration of the truth or falsity of the theory of similars. It is further suggested that the joint committee shall study the physiological action, in large and small doses, of a definite number of drugs in common use by the members of both societies, this investigation to be under the auspices of some research laboratory like the Rockefeller Institute in New York or the McCormick Institute in Chicago; and, finally, make a comparative trial of the therapeutic efficacy of these drugs, given according to the various methods of administration, in some of the large public hospitals.

Correspondence.

MENTAL HOSPITALS.

SIR,—In view of the increased attention now being paid to the hospital treatment of the insane, it is well to recognize that under that term there are several conceptions which have been proposed or actually carried into practice in varying ways. One sees that sometimes there is confusion in discussion in consequence of this fact not being considered fully. I am speaking by the book when I state that, during the debate in the Grand Committee on the Mental Deficiency Bill last year, one of the arguments or statements made by the very vigorous opposition was that there was great objection to the feeble-minded being sent to institutions for the doctors to make experiments on! Such a statement was, of course, due to the senseless suspicion felt by some more or less responsible people against any attempt to benefit mankind by research, and no doubt that suspicion will be shown by some of the public in regard to any hospital for the insane in which research work is carried out. But the majority of the institutions where the so-called hospital treatment is pursued do not carry on research work, and merely aim at individual treatment of those labouring under tangible disease. The different ideas which come under the general term can be catalogued in orderly series, but this would take up too much space. I can name a few of them.

First, there is the idea of lunacy wards in general hospitals. This idea was acted on at Edinburgh and, possibly, other towns. It was thus sought to bring lunacy within the scope of general medicine, an excellent idea in theory which the profession at large refutes in practice more and more each day by specializing.

I should place next the ideas of the London County Council, arrived at after an exhaustive inquiry instituted immediately after its constitution. The proposal (which has never been carried out) was to have a suitable establishment for the reception of cases of acute insanity, for treatment by general physicians, with the help, of course, of those specially skilled in psychiatry. I think I am right in saying that the leading idea was to give general medicine the chance of doing that which special medicine had failed to do. I am not aware how far this idea may be followed in the new hospital to be erected by the same body through the munificence of Dr. Maudsley.

Next I would place such an institution as the recently erected Mental Hospital at Cardiff, where, in addition to the care of the insane by alienists, assistance for research has been sought from the university, we hope with much ultimate success.

In all the foregoing it is to be observed that the advancement of general knowledge of the disease is an essential element. We turn from that to those places where the immediate care of the individual is the chief object.

Bethlem may be taken as an example of an institution which in principle aims at cure and not at detention. It has for many years been staffed by leaders in psychiatry, and its constitution aims at recovery or removal of the non-recovered, so that its machinery may be utilized for fresh cases which supply some hope of recovery. It is needless to say that its prime object has been supplemented by the offer of advanced teaching of a clinical nature. In fact, Bethlem, with other institutions, such as Morningside, have been veritable clinics.

After that may come the many places where a separate building has been erected for the reception of new cases in which inquiry, more or less scientific, can be, and often is, adopted, but in which the recovery of the individual is aimed at principally. This form was undoubtedly first provided in Scotland, where the example of the Fife Asylum has been followed in many newer asylums, such as Gartloch, Paisley, etc. But in these the population of the hospital portion has not been confined to the mental cases only. It is the asylum's general hospital in so far that other cases are lodged therein if they present signs of physical illness of any consequence.

Then followed in England the development of building within the asylum grounds separate establishments for the reception of recent mental cases only. As far back as 1889 I described my notions of such a place as an alternative to the more adventurous proposal of the

London County Council. Some years afterwards I had the pleasure of taking a leading part in the translation of these ideas into bricks and mortar in our County Asylum at Hellingly, though as a completed institution it was preceded by a few months by that built at Bexley under Dr. Stansfield. In addition to the concentration of medical attention on new cases I imagined, and not unwarrrantably, that it would be a great thing to be able to say to those who entered the building, which is a few yards from the gate, "Thus far need you go and no further." The idea is also grateful to the relatives of the patients, many of whom are above the rate-paid class. Undoubtedly they are more ready to send in good time their invalids because they know that they will not be "herded," but specially treated as individuals.

Then come the arrangements made in existing asylums for the more or less segregated care of new cases. A shining example of this undoubtedly must be Morningside, where, *me teste*, Sir Thomas Clouston succeeded in transforming wards, hitherto crowded with the violent and dangerous cases, into a nursing heaven. I am sure that I am right in backing him up in his claim to being the first to carry out the hospital idea with strenuous determination and to the full, in spite of the difficulties of the time and place. But good as the plan was it lacked the complete detachment from the main institution. Here, of course, the care of the individual was supplemented by much teaching for the general advancement of knowledge, the teaching at first being clinical, to be followed later by extended laboratory work, until the full conception of a clinic was established.

Then, again, we find now that in all asylums of any standing wards are put on one side for new cases, thus carrying out the general idea of concentration of treatment for the benefit of the individual. If I am not under a wrong impression, I think that Dr. Rayner at Hanwell, thirty years ago, kept all his new cases for a stated time in bed in a special ward for the purpose of careful inquiry as well as for treatment by continued rest.

To sum up, I suggest that it is necessary, when talking of the hospital idea, to determine whether it is sought to promote the welfare of the individual or the general advancement of knowledge, or a combination of the two elements. This issue is rather obscured by the practice, now becoming quite common, of adopting the name of mental hospital for what was formerly called county or borough asylum. This practice is highly laudable, in that it tends to promote in the mind of the public as well as of the staff the belief in the constant practice of the latest ideas of psychiatry; but, without special knowledge of the aims of each place, it is easy for the public to be misled as to the true significance of the term and the intentions of its users.

Perhaps I may be allowed to add a few words on a matter connected intimately with the contrast of the scientific general idea with that of the welfare of the individual. It must not be assumed, as it readily may be assumed, by the public that, in this very proper struggle for the scientific development of treatment, drugs, instruments of precision and the like shall replace that which is called moral treatment. We must always remember that insanity is the result of fault between two partners, the mind and the body. The fault may commence with either or both. Harmony may be re-established by the commencement of better things on the part of either, and, conversely, harmony can be indefinitely postponed by the misfortunes of either. A chance word or a new phase of idea conveyed by a skilful nurse may be the beginning of recovery. I may say, without any fear of efficient contradiction, that the most scientific treatment in the world will be defeated by bad or careless nursing of the mind. There is a chance, slight it may be, that in the rush for physical care the need for the old-fashioned, but indispensable, guidance of mind may be lost to sight. Beyond this there is a chance that, under more liberal ideas connected with the scientific form of treatment, responsibility for the individual may be also forgotten. We know that an insane person is potentially dangerous to himself and others; therefore, means of supervision and safe custody cannot be dispensed with, even though they may obviously hinder progress. One can foresee that, while with those who know there will be no such danger, yet with the newer school of thought and practice, science may sometimes outrun safety.—I am, etc.,

Ticehurst, June 14th. H. HAYES NEWINGTON.

INTRAVENOUS INJECTION OF IODOFORM IN PULMONARY TUBERCULOSIS.

SIR,—I have read with much interest the report of the discussion on this subject which took place at the Royal Academy of Medicine on April 4th and Dr. Dewar's reply to it which appears in the JOURNAL of June 7th.

Having used this method of treatment for phthisis ever since Dr. Dewar first made it known to the profession in the JOURNAL, I can, without the least hesitation, state that I can entirely bear out all that he has claimed for it.

The gentlemen who criticized Dr. Crofton's paper at Dublin had, with one exception, no practical experience of the treatment, and simply condemned the method from fear of disasters which seemed to have their foundations in their own imaginations.

I cannot lay claim to have given many thousands of injections, but I have given at least considerably over 3,000, and I can quite corroborate Dr. Dewar's statement that any thrombosis that may occur must be due to lack of skill on the part of the operator, as I have never seen any bad effects locally from an intravenous injection.

Sometimes a patient does get a paroxysm of coughing, but this can be completely controlled by making him take rapid sips of water, breathing out after each sip. This fact completely does away with the academic objection that the coughing is liable to produce pneumothorax and rapid dissemination of the disease in the lung.

Neither Dr. Dewar nor myself have seen the slightest bad effects from an intravenous injection, and those who have condemned the treatment or have hesitated to give it a trial have based their objections on purely theoretical grounds.

Dr. Dewar has never claimed that his discovery is a panacea for pulmonary tuberculosis, that intravenous injections will cure every case of phthisis. He, however, does claim—and I can fully bear out his contention—that iodoform injected intravenously will give as good results as any other form of treatment that is at present practised by the medical profession.

It has been my experience within the last few years that where iodoform failed to achieve success it was hopeless to expect to save the life of the patient by any other method of treatment, and this conclusion was only arrived at after a thorough trial had been given to other remedies.—I am, etc.,

South Shields, June 8th. JOHN BAIN, M.B., C.M.

ADRENALIN IN CHLOROFORM ANAESTHESIA.

SIR,—It is to be hoped that the recent correspondence on the dangers of adrenalin in nasal surgery will put upon guard those surgeons who have up to the present found adrenalin satisfactory and safe. I am myself acquainted with two fatal cases, both following immediately the injection of adrenalin, and both under chloroform anaesthesia before the operation had commenced.

That there was danger was first brought home to me by the peculiar pallor, accompanied by cardiac distress and pain at the back of the neck and occiput, which followed an injection of a few drops of 1 in 1,000 solution. If this patient had been under chloroform anaesthesia it is possible that this would have been a fatal case. It is obvious that a solution of 1 in 1,000 is to many people a dangerous strength.

As Mr. Guthrie remarks, the nose must be packed with adrenalin for at least one hour for satisfactory ischaemia, and it is almost essential that the surgeon himself should do the packing; therefore, this will cause a difficult operation to occupy two to two and a half hours. Moreover, in a few cases it is physically impossible to introduce packing behind a deflexion on one side. The following technique will be found satisfactory in affording a bloodless operation field free from all danger:

1. An injection of morphine (grain $\frac{1}{6}$ to $\frac{1}{4}$) is made about twenty minutes before the surgeon's arrival.

2. A few gauze strips well pressed out after soaking in equal parts of adrenalin and 10 per cent. cocaine solution are inserted into each nostril.

3. The general anaesthetic should now be commenced, or if local analgesia is to be employed the syringe should be tested and charged with the infiltration solution. Pure chloroform should not be used for nasal operations if cocaine and adrenalin are also employed. A mixture of chloroform (1 part) and ether (2 parts) is quite satisfactory after the morphine injection. It should be noted that morphine overcomes some of the toxic action of cocaine.

4. When the patient is surgically anaesthetized an injection of ½ per cent. cocaine solution should be made in two spots on each side of the septum; if the needle passes well under the perichondrium the pressure of the solution will render the mucous membrane pale and, more important than this, will give a characteristic sensation of resistance. The syringe should be very powerful, on the principle of the dental syringe but of larger capacity, and the needle should be fairly coarse.

No adrenalin should be injected, especially if a general anaesthetic is being employed. The tachycardia, dilated pupil, and greyish pallor are all signs of excessive stimulation of the sympathetic nervous system and are identical with the immediate signs of surgical shock, with the addition of the direct stimulating effect of adrenalin upon the heart itself, which, of course, with a 1 in 1,000 solution, only aids the onset of failure.—I am, etc.,

Manchester, May 11th. WILLIAM WILSON, M.D.

A CONSTITUTIONAL POINT.

SIR,—In a letter appearing in your issue of June 14th Sir Victor Horsley comments on my action as President of the Royal College of Surgeons.

When he heard that the attention of the College had been called to his conduct by the Home Secretary, he wrote to me requesting that copies of all documents which had passed, or might in future pass, between me, or the College, and the Home Secretary should be forwarded to him. This letter I answered from the College of Surgeons the following day, and on returning to my house found a letter from his solicitor accusing me of the discourtesy of not replying. Sir Victor Horsley's statement that I did not reply until I had received a letter from his solicitor is therefore not in accordance with fact.

His comprehensive demand was one for consideration by the Council, not by me. When complaints are made to the Council with regard to the conduct of Fellows and Members, it is not the custom to communicate them to the parties involved, unless the Council decide to take the matter up. If any disciplinary procedure is contemplated, due notice is given, and ample time is allowed for explanation or defence. This, in my opinion, is the reasonable, fair, and prudent course to pursue. Complaints reach the College from time to time of the conduct of Fellows and Members which no useful purpose would be served by disclosing.

After mature consideration the Council decided that the evidence laid before them was so contradictory that they were not in a position to enter upon the ethical questions involved. They are, therefore, now under no obligation to disclose the precise form of the complaint, but, as a matter of courtesy, they have allowed Sir Victor Horsley access to all documents referring to himself, and have communicated to him the terms of their reply to the Secretary of State.

May I add that Sir Victor Horsley in numerous letters in the lay press shows that he is possessed by a fixed idea that I personally have been conspiring against him? I trust my professional brethren will believe that nothing is, or ever has been, further from my inclination or the fact.—I am, etc.,

RICKMAN J. GODLEE, *President.*

Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., June 17th.

RHEUMATOID ARTHRITIS.

SIR,—When was Dr. Uhthoff appointed Editor-in-Chief of the BRITISH MEDICAL JOURNAL? We have got a Journal Committee, an Editor, and two Assistant Editors. Now we have got a self-appointed individual to supervise the Editor. If I were Editor—which post I should like to hold for about one week—I would not only not print this individual's letter, but I would tell him to mind his own business. Personally I attach no value to his opinion, except that I should feel that there was something wrong with my conduct if he approved of it. I may inform him that I would not attenuate, modify, or withdraw a single statement which I have made. On the contrary, many of the statements would have been very much stronger and more fitting for the occasion only for the supervised Editor.—I am, etc.,

Liverpool, June 14th. JAMES BARR.

*** Dr. James Craig (Llandudno) sends the following references in reply to the concluding paragraphs of Sir James Barr's letter published on June 14th, p. 1298: For the report of the Section of Balneology and Climatology of the Royal Society of Medicine to the *Proceedings* of the Society for April, 1913, p. 62, lines 22 and 23; for the statement attributed to Sir Robert Christison, his lectures for 1873 (February), in which the quotation about the salts of calcium will be found.

We cannot continue this correspondence.

SYPHILIS AND CANCER OF THE TONGUE.

SIR,—We have read with much interest the correspondence in the BRITISH MEDICAL JOURNAL concerning the interdependence of syphilis and cancer of the tongue. After all, this has a bearing on only part of a very important question.

In these laboratories an inquiry has been carried on during the last eighteen months upon a possible relationship between malignant disease and syphilis. Sixty cases of cancer have been investigated and a positive result with the Wassermann reaction obtained in 4 only. Carcinoma of the mucous membrane of the mouth provided 20 cases, with 1 markedly positive Wassermann reaction, while another was indefinite.

The suggestion put forward by Dr. Renshaw that the presence of malignant disease in a syphilitic patient may cause such an alteration in the blood as to negative the Wassermann reaction had occurred to us also.

We hope, at no distant date, to publish the result of our work on this subject.—We are, etc.,

HENRY MACCORMAC,
HECTOR COLWELL,
A. CLIFFORD MORSON.

Cancer Research Laboratories, Middlesex Hospital, London, W., June 11th.

COST OF VACCINE TREATMENT.

SIR,—Would it not be a great convenience to your readers if your "vaccine" contributors would state in their articles what the cost of vaccine treatment is in any disease in which they advocate its use? At present it seems to me that the interest in this matter is chiefly commercial rather than scientific. Many of us might persuade our patients to make the experiment if only we could tell them what the cost is likely to be.—I am, etc.,

Leeds, June 16th. A. G. BARBS, M.D.

DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

SIR,—May I appeal through your columns to all former residents at this hospital on the occasion of the retirement of the Secretary and Superintendent, Mr. J. Unsworth?

For the long period of forty-four years Mr. Unsworth has devoted his energies to the service of the hospital, and throughout that time he has maintained the most cordial relationships with the successive members of the resident staff, and in every way in his power has assisted them and endeavoured to make their term of office more agreeable.

I feel sure that all of them will welcome the opportunity of marking their appreciation of his valuable services, and shall be glad to receive their donations towards a presentation to him on his retirement.—I am, etc.,

GEORGE C. E. SIMPSON
(Honorary Secretary, the Medical Board).

21, Rodney Street, Liverpool, June 13th.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The following degrees have been conferred:

M.D.—L. S. T. Burrell, M. F. Grant, A. F. MacCallan, S. V. Pearson.
M.B., B.C.—J. H. Pendred, H. C. T. Longdon, S. H. Rouquette, C. Warner.
M.B.—W. C. Hodges.
B.C.—A. F. R. Wolloston.

Examinations.

The following candidates have been approved at the examinations indicated:

Preliminary Science (*Part I, Chemistry*).—G. E. Birkett, R. C. S. Bowker, A. D. Coates, B. M. Coates, F. C. Cozens, H. T. Cubbon, R. W. M. Dandy, A. W. R. Don, F. N. V. Dyer, R. H. Emmett, C. W. S. Fernando, J. B. Foster, R. French, C. I. C. Gill, W. N. Goldschmidt, N. B. de M. Greenstreet, E. W. Hall, J. Harbord, L. B. Hartley, W. E. Heath, L. G. Higgins, C. R. Hind, N. Hoole, S. M. M. Jabir, R. W. Jackson, A. V. Johnson, J. S. La Fontaine, H. C. Langdale, F. G. Laurie, J. G. Lawn, E. E. Llewellyn, R. Lumsden, G. Lyon Smith, J. W. MacKenzie, J. H. Massey, T. H. McCall, C. S. Millard, H. J. T. Neilson, A. V. Pegge, A. S. Richardson, J. A. W. Roberton, G. M. Shackel, G. H. Shakespeare, H. F. Squire, H. J. R. Surrage, A. Swann, A. P. Thompson, G. D. Thomson, H. M. Tulloch, M. D. Vint, W. M. Wallace, Y. S. Wan, A. Winfield. (*Part II, Physics*).—H. R. Bickerton, C. L. P. Biggar, G. E. Birkett, A. D. Coates, C. T. Cobbold, H. T. Cubbon, R. W. M. Dendy, F. N. V. Dyer, R. H. Emmett, T. Fernandez, C. W. S. Fernando, J. B. Foster, R. French, W. N. Goldschmidt, E. F. S. Gordon, N. B. de M. Greenstreet, W. B. Hathorn, W. E. Heath, H. P. D. Helm, L. G. Higgins, N. Hoole, S. M. M. Jabir, R. W. Jackson, A. V. Johnson, F. G. Laurie, J. G. Lawn, P. C. Livingston, E. E. Llewellyn, A. G. F. McArthur, T. H. McCall, B. S. Martin, J. H. Massey, J. R. Mitchell, J. W. McK. Nicholl, J. Norman, C. E. V. Porter, E. A. Raimes, A. S. Richardson, J. A. W. Roberton, G. H. Shakespeare, A. T. Spoor, H. F. Squire, H. J. R. Surrage, A. Swann, A. P. Thompson, G. D. Thomson, C. G. Tindall, N. J. Tuck, A. C. Walker, W. M. Wallace, W. T. Williams-Green, A. Winfield, J. M. McC. Wright. (*Part III, Elementary Biology*).—H. R. Bickerton, R. W. M. Dendy, R. H. Emmett, S. L. Higgs, S. M. M. Jabir, J. G. Lawn, T. H. McCall, Y. S. Wan, A. Winfield.

Third M.B. (*under old regulations*) (*Part I, Pharmacology and General Pathology*).—R. Hodson, G. H. Maw, J. H. Newmarch, M. W. Paterson, A. S. Seabrooke, J. Ll. M. Symns.

VICTORIA UNIVERSITY OF MANCHESTER.

Degrees.

The following candidates have been approved at the examination indicated:

M.D.—†D. Dougall, *H. Heathcote, *C. B. Marshall, *A. B. Smallman, A. G. Bryce, F. M. Rodgers, A. Wharton.
† Awarded a gold medal. * With commendation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary meeting of the Council was held on Thursday, June 12th, Sir Rickman J. Godlee, Bart., President, in the chair.

Diplomas.

Diplomas of Fellowship were granted to twenty-nine candidates found qualified at the recent examinations as follows:

H. H. Broome (Capt. I.M.S.), D. C. Taylor, A. E. Iles, H. G. Frean, H. C. R. Darling, R. H. Mawhood, C. E. Shattock, S. Hoyte, A. C. Palmer, C. D'O. Grange, H. Neame, D. D. Pinnock, A. H. Todd, J. E. P. Watts, C. V. Anderson, J. A. Davis, N. F. Lock, S. Ritson, M. E. T. D. Vlasto, G. C. Chubb, C. E. S. Jackson, W. M. Oakden, W. S. Perrin, R. Ferguson, W. Gemmill, J. Kennedy, C. F. M. Saint, F. G. N. Stephens, J. Thompson.

Diplomas for the Licence in Dental Surgery were granted to forty-nine candidates found qualified at the recent examinations.

Examiners.

Mr. William Thorburn was elected on the Court of Examiners for the period of five years, subject to the provisions of the Charter.

The President reported that the vacancy on the Board of Examiners in Dental Surgery, occasioned by the retirement of Mr. Sidney Spokes, would be filled at the next ordinary meeting of the Council.

The following were elected:

In Elementary Biology: G. P. Mudge, W. G. Ridewood. In Anatomy: J. Cameron, J. E. S. Fraser, A. M. Paterson. In Physiology: C. F. Myers-Ward, E. H. Starling. In Anatomy for the Fellowship: C. H. Fagge, R. W. Reid, J. Sherren, G. Taylor. In Physiology for the Fellowship: E. W. W. Carlier, J. S. Edkins, F. Gotch, H. W. Lyle. In Midwifery: H. R. Andrews, W. B. Bell, G. F. Blacker, G. D. Robinson. For the Diploma of Public Health: R. T. Hewlett (Part I), R. D. Sweeting (Part II). For the Diploma in Tropical Medicine: J. W. H. Eyre (Bacteriology), C. L. Daniels (Diseases of Tropics).

Votes of Thanks.

The thanks of the Council were given to Sir Henry Morris as Visitor to the Examinations of the Egyptian Medical School at Cairo; and to Mr. Ernest J. Wilde, on his retirement as Solicitor to the College.

THE ROYAL COLLEGES IN IRELAND.

Deficiency in General Education.

A resolution was recently passed by the Royal Colleges of Physicians and Surgeons in Ireland: "That our Colleges instruct their examiners at all professional examinations to report all cases of deficient general education to the Committee of Management; and in any case where the deficiency is such as to reflect discredit on our Colleges, to reject the candidate in the professional subject in which he presents himself, and to enter the cause of his rejection, 'deficiency in general education,' on the result sheet."

THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

Portrait of Dr. Lombe Atthill.

On June 6th a meeting of the Royal College of Physicians of Ireland was held, at which the President received, on behalf of the College, a portrait of the late Dr. Atthill. Dr. Little, Senior Fellow of the College, made the presentation on behalf of the Rev. William Atthill and the Misses Atthill, who were anxious that a picture of their father should be preserved in the College. Dr. Atthill was admitted a Licentiate of the College on February 12th, 1857, and elected a Fellow on May 1st, 1861, and subsequently served in every office of the College, being elected President in 1888 and again in 1889. Dr. Little said that during his long connexion of 53 years with the College, Dr. Atthill was its constant friend and wise adviser, and the high position which the College at present occupied was in no small measure due to the way he worked for the promotion of its interests. The portrait, which is the work of Miss Purser and an excellent likeness of the late Dr. Atthill, was accepted by the President, who expressed the great pleasure with which the Fellows received the gift, and the assurance that it would be preserved as one of the greatest treasures of the College.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The following officers have been elected for the ensuing year: *President:* Mr. Richard D. Purefoy. *Vice-President:* Mr. F. Conway Dwyer. *Secretary:* Sir Charles A. Cameron. *Council:* Mr. William Stoker, Sir Charles A. Cameron, Sir Lambert H. Ormsby, Mr. Henry Gregg Sherlock, Sir Charles B. Ball, Mr. John B. Story, Sir Thomas Myles, Sir John Lentaigne, Sir Arthur Chance, Mr. F. T. Porter Newell, Mr. Shepherd M'C. Boyd, Mr. Robert H. Woods, Mr. Richard Lane Joynt, Mr. R. Bolton McCausland, Mr. Edward H. Taylor, Mr. William Taylor, Mr. R. Charles B. Maunsell, Mr. Trevor N. Smith, Mr. William Ireland Wheeler.

Medico-Legal.

IMMUNITY OF TRADE UNION FUNDS.

A case decided by Lord Cullen in the Court of Sessions, Edinburgh, on June 14th, possesses some interest for the medical profession in view of the disposition to establish medical unions registered under the Trade Union Acts. The earlier parts of the judgement are in accord with what has generally been understood, but the concluding sentences raise possibilities which have not been present in the mind of every one.

The action was brought by an ex-official of the National Sailors' and Firemen's Union of Great Britain and Ireland against the union and its officials and the trustees of the union for alleged slanders in the *Clyde Seamen's and Firemen's Gazette*. Damages (£1,000) were sought, and an interdict against the continued publication of alleged defamatory statements.

The Court dismissed the action with expenses. Lord Cullen, according to the report in the *Times*, said that the conclusion for damages was directed only against the trustees of the union. Under Section 4 (1) of the Trade Disputes Act, 1906, no action lay against a trade union in respect of any tortious act alleged to have been committed by or on behalf of the trade union. The pursuer, however, contended that the action, so far as it concluded for damages, might be brought against the trustees of the union, so that a decree might be got which would give recourse against the union's funds. Before the Trade Disputes Act, 1906, a trade union could be sued in respect of such tortious acts as were here alleged. The Act, however, gave trade unions an immunity from such suits. This immunity would be worthless if actions falling within it could be prosecuted against the trustees of a union and recourse had against its funds and property to the same extent as if the union itself had remained exposed to action. Therefore, the pursuer's case, so far as it concluded for damages against the trustees, was irrelevant. As to interdict, his lordship said it was not suggested that the alleged slanders were actually perpetrated by the trustees, and the reason given for combining them with the union in this conclusion was that the *Gazette* was the property of the union vested in them. He did not think that this presented any relevant ground for an interdict against the trustees. There remained the conclusion for interdict against the union itself. Reading Section 4 (1) of the Act of 1906, he did not see how the action could be said to be other than one brought in respect of tortious acts alleged to have been committed. The pursuer was not left without a remedy. He had his action for damages, if he had been defamed, against the individual officials of the union responsible for the publication of the defamatory matter, and similarly he might seek to have them interdicted from repetition of their acts.

Obituary.

NATHANIEL H. ALCOCK, M.D.DUB., D.Sc.LOND.,

PROFESSOR OF PHYSIOLOGY, MCGILL UNIVERSITY, MONTREAL.

IT is with deep regret that we have to announce the death of Professor Alcock at Montreal, where he held the Chair of Physiology (Joseph Morley Drake Professorship) at McGill University.

Nathaniel Henry Alcock was born in 1871, and was a son of Dr. D. R. Alcock, staff surgeon in H.M. Navy, and nephew of the Rev. Dr. T. K. Abbott, D.D., Litt.D., Senior Fellow of Trinity College, Dublin. He received his medical education at Trinity College, Dublin, and Sir Patrick Dun's Hospital. He graduated B.A. in Dublin University in 1893, with the senior moderatorship and gold medal in natural science. He graduated M.D. in 1896, and was shortly afterwards appointed demonstrator of anatomy at Victoria University, Manchester. In the following year he was appointed assistant to the King's Professor of Institutes of Medicine (Physiology and Histology) in the School of Physic of Trinity College and the Royal College of Physicians, Dublin, a post which he held till 1902. In 1903 he was appointed demonstrator of physiology in London University, and in 1904 lecturer in physiology in St. Mary's Hospital Medical School, Paddington, being successor to Professor Augustus D. Waller in the latter post. In 1906 he was appointed Vice Dean of the Medical School, and in 1909 he was granted the degree of D.Sc. of London University for his researches on the influence of anaesthetics on nervous phenomena.

In 1911 he was appointed to the Chair of Physiology at McGill University, Montreal, the post which he held at his death. By it British science has lost one of its sons whose work was always of the highest merit. Those who were associated with him could not fail to be impressed by the thoroughness and accuracy with which all his experimental researches were carried out. Every control that could be applied was used, every possible source of error guarded against to secure the foundations upon which his inferences were based. Consequently all his published work bears the stamp of an accuracy which renders it all the more valuable as a contribution to modern physiology. His, too, were a breadth of scientific taste and a versatility which remind one of Helmholtz, and are becoming all too rare in our modern age of extreme specialization. One of his first published papers was a monograph on Irish Bats, which appeared in the *Irish Naturalist*, vol. viii, and is still quoted as the leading authority on the subject, and included unique photographs which have been reproduced many times in works on British natural history. Astronomy also was a favourite subject of his, and here, too, his practical knowledge and manipulative and mechanical skill were very evident. He not only observed the heavens, but constructed the silver-on-glass mirrors for the telescopes with which his observations were made; and their quality excelled in some cases that of the products of the workshops of the professional optician.

As a teacher most cordial relations always existed between him and his classes. He was always willing to descend to the level of the beginner, in order to appreciate his difficulties, and help him to understand the intricacies of physiology.

His administrative ability was of a high order, and was testified to by the numerous committees upon which he at different times served. His services to St. Mary's Hospital Medical School, at a serious crisis in its history, will long be gratefully remembered. In his capacity as Vice-Dean he originated the negotiations with the Board of Education which resulted in establishing the medical school on a much more secure financial basis. The example of St. Mary's was afterwards followed by several other schools.

In private life he had nothing of the dry scientist about him, but showed a charmingly agreeable and humorous personality, flavoured with a lurking satirical tendency which could not always be quite suppressed in his writings. His pluck and courage in suffering and danger were conspicuous features of his character. Quite recently, having had his hand badly crushed by a falling boulder while climbing a mountain, though fainting and weak from loss of blood and in extreme pain, he trimmed up the crushed finger-tips with his uninjured hand, and was afterwards found trying to staunch a secondary haemorrhage himself rather than arouse his wife who was sleeping, exhausted from constant attendance on her crippled husband.

To the present writer, who knew him as a fellow student and afterwards became his demonstrator, he was always more like a colleague and a brother than a chief, and a pleasanter colleague one could never meet.

His published contributions to scientific literature were very numerous, and included researches on the electromotive force of the negative variation of various nerves, especially the vagus, under the stimulus of respiration, published in *Pflüger's Archiv*; fatigue in nerve and the velocity of the nervous impulse in tall and short people, in the *Proceedings* of the Royal Society (vols. 73, 77, 78); numerous papers on the relation between the physical, chemical, and electrical properties of the nerves, in the *Journal of Physiology*. Among his other contributions were articles on: "Muscarine," "Carpain," "The Accurate Dosage of Chloroform by means of a Regulating Inhaler"—the latter constructed by himself. A *Textbook of Experimental Physiology* (in conjunction with Professor E. H. Starling and F. O'B. Ellison); chapters on the physiology of nerve in *Further Advances in Physiology*, and very many others.

He married, in 1905, Norah Lilian Lepard, daughter of the late Sir John Scott, K.C.M.G., D.C.L., and at the early age of 42 leaves his widow, one son, and three daughters to mourn his loss.

Sir WILLIAM OSLER writes:

The death of Dr. Alcock is a great loss to the Faculty of Medicine at McGill University. During the short time of his occupation of the chair his work was chiefly in connexion with the organization of his department. He was much appreciated both by his colleagues and by the students. The energy and enthusiasm he displayed, though suffering for nearly three years from medullary leucaemia, were remarkable. I saw him a few weeks ago with Dr. Martin, in Montreal, in the terminal infection with which these cases so often end. He had finished his session's work, and was struggling in vain with the weakness associated with the paroxysms of fever. He had made an exhaustive study of his own case, and I do not remember ever to have seen blood charts in the disease so extensive or so elaborate. Against an implacable enemy he put up a splendid fight, and literally died in harness.

OSCAR WILLIAM CLARK, M.A., M.B.OXON.,

SENIOR PHYSICIAN, GLOUCESTER GENERAL INFIRMARY.

WE regret to record the death, on June 7th, of Dr. Oscar Clark, a medical man who for many years had played a prominent part in the professional and public life of the city of Gloucester. A few years ago he had had a somewhat serious illness, and it was known that his heart was affected, but he remained very active, and his death was quite unexpected; it occurred, indeed, quite suddenly while he was paying an official visit to the prison of which he was medical officer.

Dr. Clark, who at the time of his death was in his 59th year, joined St. Bartholomew's Hospital as a student in 1877, after a distinguished career at Oxford, where he took a first class in Natural Science. In 1881 he became M.R.C.S.Eng., and in the following year graduated M.A., M.B. of his old university. It was not very long afterwards that he established himself in Gloucester, but meantime he had successively filled the offices of house-physician and house-surgeon of St. Bartholomew's, and of resident clinical assistant of the City of London Hospital for Diseases of the Chest.

His early progress in Gloucester was rapid; in 1885 he was a successful candidate for a vacancy on the honorary staff of the General Infirmary, while in the same year he became medical officer of H.M.'s Prison, and little by little he began to play an increasingly active part in the general and professional life of the city. At the time of his death he was, in addition to being senior physician of the infirmary and senior medical officer of the provident dispensary, chairman of the District Nursing Association governor of the United Endowed Schools, a valued member of the Public Library Committee, and a member

of the council of the Bristol and Gloucestershire Archaeological Association. He was a member of the British Medical Association, and a few years ago was president of the Gloucestershire Branch.

To the affairs of the District Nursing Society he devoted much energy, and this body shortly after his death held a special meeting for the purpose of recording its profound regret at its death and

Its lasting gratitude for the intense interest he had ever taken in the conduct of the business and in the efficiency of the society, in the general management of the home, and in all things pertaining to the comfort and welfare of the superintendent and her staff.

A man of wide culture, Dr. Clark was much interested in the Oxford Extension Lectures in Gloucester, and was the first chairman of the committee in charge of them. In private life he devoted much of his spare time to literary pursuits, the early English poets being his special study; he was also an enthusiastic and highly skilled photographer. Dr. Clark was married, and is survived by his wife and several daughters. His remains were cremated at Birmingham.

JOHN WILLIAM FAWCITT, L.R.C.P., L.R.C.S.EDIN., BROUGHTON-IN-FURNESS.

THE sudden death of Dr. Fawcitt, of Broughton-in-Furness, has robbed his patients of the services of one who was a notable example of the very best type of country doctor, and will be much missed by a large circle of friends; for to know John Fawcitt was to be his friend.

He was a Yorkshireman, and was brought up in Thirsk. His school days were passed in York, and he then went to the University of Edinburgh, where he qualified in 1884. After serving as assistant at Slough and Castleford, he settled in Broughton in 1887, and in that charming country he has lived and laboured for more than a quarter of a century, endearing himself to the whole countryside by his painstaking work and ready sympathy. There was no man, woman, or child in his district that he did not know personally and for whom he had not a kind word.

It is difficult to speak of his characteristics, so wide were his interests. Professionally he was very sound, keeping in touch with the latest developments of medicine. He joined the British Medical Association in 1903, on the formation of the North Lancashire and South Westmorland Branch, of which he became President in 1910.

He was a great admirer of the beautiful in Nature, and few knew the Lake District better than he. Whilst he was interested in all sport, and entered with zest into the amusements and pursuits of his neighbours, his chief pastime was fly-fishing, and he was an adept in this gentle art. All his too brief holidays were spent in the exercise of his favourite sport among the becks, tarns, and lakes of the north country, the burns of Galloway, the lochs of Ireland, the glacier-fed streams of Norway, or the great salmon rivers of Scotland. Whilst he enjoyed to the full a week or two of salmon fishing, he used to say that, after all, there was nothing to equal a day on a good trout stream with a little 11-ft. rod and the trout on the feed. He made a special study of the habits and life-history of the Salmonidae, and took a great interest in the work of the Duddon and Windermere Fishery Board, of which he was a member. He was a capital teller of stories, and had a full store of yarns, fishing and otherwise. He was a most interesting companion, and could talk well on a wide range of subjects, and was, moreover, a good listener. As becomes a Yorkshireman, he was a great lover and an excellent judge of a horse, and always prided himself on keeping at least two rattling good cobs and on having them turned out well. A touching sight at the funeral was to see his favourite old dun cob "Prince" led behind his dead master to the churchyard.

He was a good Churchman and a strong Conservative, and died beloved by his friends and respected by all.

WE regret to have to record the death, on June 10th, of Dr. G. H. ROQUÉ DABBS at his residence in Westminster. Dr. Dabbs had been for some years in failing health and had suffered from a distressing malady, which, however, he had not allowed to interfere with his professional avocations. More recently he had experienced several attacks of angina pectoris, and his death was no doubt due to the accidental inhalation of an overdose of chloroform taken to alleviate his sufferings. Dr. Dabbs, who was born in January, 1846, was the son of a staff surgeon in the Royal Navy and of a Basque lady. He was educated at the Royal Naval School, New Cross, and at King's College, London. In 1867 he took the diplomas of M.R.C.S. and L.S.A. and the degrees of M.B., C.M. at the University of Aberdeen. In the following year he graduated M.D. in the same university. After some years spent in visits to France and Spain, during one of which, we believe, he served as surgeon with the Spanish army, he settled in practice in the Isle of Wight. Dr. Dabbs had strong literary tastes, and it must have been a peculiar pleasure to him to have been the medical attendant of Tennyson when the poet resided, as was his custom for a part of every year, in the Isle of Wight. In the memoir of the poet by his son it is stated that according to Tennyson's manuscript notes *The First Quarrel* "was founded on an Isle of Wight story; Dr. Dabbs was the doctor." Dr. Dabbs attended Tennyson in his last illness, and wrote an account of the passing of the great poet beyond the bar. Dr. Dabbs wrote a good many books in prose and verse, among which *Ugly, a Hospital Dog*, was probably the most successful. He also composed several plays, and for some time edited, and we believe for the most part wrote, a small periodical which he called *My Journal*. In 1903 he left the Isle of Wight to become medical officer to the managers of the Stock Exchange. He had recently taken a partner, but retained the position until the time of his death.

DR. LOUIS ADOLPHUS DUHRING, of Philadelphia, whose authority on questions of dermatology was recognized throughout the medical world, died on May 8th in his 68th year. He took his degree at the University of Pennsylvania in 1867. After studying for two years in Paris, London, and Vienna, he returned to Philadelphia, where in 1870 he opened a dispensary for skin diseases. In 1871 he became a lecturer in the Faculty of the University of Pennsylvania, and in 1876 he was appointed professor. In 1911 he retired with the title of Emeritus Professor. He was one of the founders of the American Dermatological Association. Of his numerous works on dermatology, the principal are a *Practical Treatise on Diseases of the Skin*, which appeared in 1887, and was translated into French, Italian, and Russian. Of the others, his *Atlas of Skin Diseases* (1876) and his *Textbook of Cutaneous Medicine* (1898) may be mentioned.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the profession in foreign countries who have recently died are: Dr. Theophile Anger, formerly surgeon to the Paris hospitals; Dr. E. Bennecke, lecturer on surgery in the University of Jena; Dr. Cl. Bernoud, of Lyons, a well-known rhinologist and laryngologist, aged 43; Dr. A. A. Bliss, for more than twenty years laryngologist and otologist to the German Hospital and Mary Drexel Home, Philadelphia, a former president of the American Laryngological Association, aged 53; Dr. Bochenek, professor of anatomy in the University of Cracow; Dr. David Coggin, consulting ophthalmologist to the Salem Hospital, Massachusetts, aged 69; Professor Ernesto Ferrantini, of Rome, a well-known specialist in diseases of children; Dr. Frederick Forchheimer, professor of paediatrics and for some time Dean of the Medical College of Ohio, author of works on the prophylaxis and treatment of internal diseases, the therapeusis of internal diseases, president of the Association of American Physicians in 1910, aged 59; Dr. Edward Garceau, gynaecologist to the out-patient department of St. Elizabeth's Hospital, Boston, author of a textbook on tumours of the kidney, aged 40; Professor Raimondo Guiata, founder of the Children's Hospital of Milan; Dr. Francis Parker Kinnicutt, professor of clinical medicine in the New York College of Physicians and Surgeons, and in 1907 president of the Congress of American Physicians and Surgeons; Dr. Charles Hunton Knight, of New York, for many years professor of laryngology in Cornell Medical College, in his 64th year; Professor Antonio Marro, Director of the Public Asylum, Turin; Dr. George H. Powers, of San Francisco, Emeritus Professor of ophthalmology in the University of California, aged 72; Dr. Ernest L. Shurly, one of the founders and Emeritus Professor of laryngology and clinical medicine in the Detroit College of Medicine,

aged 67; Professor Willy Thorn, head of the gynaecological department of the Magdeburg Municipal Hospital, aged 56; Dr. Camillo Verdelli, lecturer on medicine in the Medical Faculty of Parma; Dr. P. Vergely, professor of histology and afterwards of pathology and general therapeutics in the University of Bordeaux, author of numerous medical monographs, just before completing his 74th year; Dr. Alcibiades Vicencio, extraordinary professor of obstetrics in the University of Santiago (Chile) and director of the School of Midwives in that city, a strenuous advocate of puericulture and initiator of a boy-scout movement in Chile; and Dr. Theodor Weyl, lecturer in the Technical High School of Charlottenburg, and well known as a hygienist, author of many writings on subjects connected with his speciality, aged 62.

The Services.

GLASGOW TERRITORIAL FORCE ASSOCIATION.

THE Army Council has approved of Colonel Donald J. Mackintosh, M.V.O., etc., Assistant Director of Medical Services, Lowland Division, being appointed to a seat as a military member of the Territorial Force Association for the city of Glasgow.

Medical News.

THE annual general meeting of the Research Defence Society will be held on Tuesday, June 24th, at 5 o'clock, at the Royal College of Physicians, Pall Mall. The chair will be taken by Sir David Gill, K.C.B., F.R.S., President of the Society. The report will be presented by the Hon. Sydney Holland, Chairman of Committee. Other speakers will be: Sir William Osler, Regius Professor of Medicine at Oxford; the Right Rev. Dr. Frodsham, sometime Bishop of North Queensland; and Mr. Waldorf Astor, M.P., and Sir Hugh Bell.

ON March 29th the Texas Senate rejected, by a vote of 14 to 11, a bill providing for the sterilization of defectives in the State institutions.

AMONG the members of King George's suite who received decorations on the occasion of His Majesty's recent visit to Berlin was Sir James Reid, on whom the German Emperor conferred the Order of the Red Eagle (First Class).

THE New York Academy of Medicine has issued an appeal to the public for funds to enable it to erect a new building. The Fellows of the Academy have promised £25,800.

SURGEON-GENERAL JOSEPH E. GODFREY, chairman of the Local Government Board of British Guiana, has been reappointed a member of the Executive Council of that colony.

THE Hamburg Cancer and Tuberculosis Research Institute has received from an anonymous benefactor a gift of £1,000 to be applied towards the erection of a department for investigation of fungi. Dr. H. C. Plaut has been appointed director of the new department.

AT the meeting of the Royal Society on Thursday next a paper on light sensations and the theory of forced vibrations will be read by Dr. G. J. Burch, and another on the luminosity curve of a colour-blind observer by Mr. W. Watson.

THE authorities of the institution known as the Caterham Sanatorium and Surrey Hills Hydropathic celebrated by a luncheon party, on May 30th, the tenth anniversary of its establishment. It is conducted, we are informed, on the same lines as the Battle Creek Sanatorium, Michigan, U.S.A.

The annual prize distribution at the medical school of St. Thomas's Hospital is to take place next Tuesday, June 24th, at 3 p.m., the ceremony being performed by the Right Hon. Lord Ampthill. A garden party on the terrace of the hospital will follow, and the various departments of the joint institutions be thrown open to inspection.

THE annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held on Wednesday and Thursday, July 16th and 17th, at the rooms of the Medical Society of London. The annual dinner of the association will take place at the Café Monico on the evening of July 16th.

AS announced in the advertisement pages, the next examination of candidates for the Royal Naval Medical Service will be held at the Examination Hall, 8, Queen Square, Bloomsbury, W.C., on September 29th, and following days. Twenty-five appointments are offered for competition. Application forms and further particulars can be obtained from the Medical Director-General, Admiralty, S.W.

THE Royal Sanitary Institute has elected Mr. Waldorf Astor, M.P.; Mr. Lewis Haslam, M.P.; Major H. B. Fawcus, R.A.M.C., assistant professor of hygiene, Royal Army Medical College; Lieutenant-Colonel Sir Joseph Fayrer, R.A.M.C., superintendent of the Royal Infirmary, Edinburgh; Dr. W. H. Hamer, medical officer to the London County Council; Dr. F. St. George Mivart, medical inspector to the Local Government Board; and Professor H. A. Woodruff, M.R.C.S., L.R.C.P., M.R.C.V.S., of the University of Melbourne, to be Fellows of the institute.

AT the annual meeting of the Royal National Pension Fund for Nurses, on June 12th, the Chairman (Sir Everard Hambro) said that the invested funds stood at a book value of £1,720,475 at the end of last year, as against £1,632,725 at the end of 1911, and that any depreciation due to a fall in market values was well covered by the reserve fund. The sum now being paid to annuitants amounted to about £40,000 a year. The experience of the fund was that their annuitants lived long beyond the term of their assessed expectation of life at the time of their retirement. This, of course, was a disadvantage to the fund, but it showed what an advantage the fund was to nurses.

DR. JOHN JOHNSTON, of Bolton, who has taken a practical interest in ambulance work for the past twenty-five years, was the recipient on June 11th of a handsomely mounted umbrella from members of the Bolton ambulance class. The presentation was made at a meeting for the distribution of certificates and medallions secured by the Bolton ambulance division of the Lancashire and Yorkshire Railway during the past year. This division has for some years past held a conspicuous position among ambulance corps in the North of England; last year it won the shield offered by the company, and this year was awarded the Sir George Pilkington cup. In the course of the proceedings many allusions were made to the indebtedness of the corps to Dr. Johnston's tuition, and a comparison was supplied by the latter of ambulance work as it is to-day and as it was twenty-five years ago.

AT a meeting of the general court of governors of St. George's Hospital, on June 12th, it was decided by a majority of 17 on a total of 29 votes to take no action in the question at issue between the hospital and the King Edward's Hospital Fund for London until a report had been received from Lord Moulton and Sir George Hayter Chubb, who, at the request of the president of the hospital, Princess Christian, have consented to hold an independent inquiry. This decision was reached as an amendment to a motion to the effect that the hospital should provide the difference between £1,000 and the sum expended on the bacteriological and pathological departments out of the discretionary fund, as suggested by the authorities of the King's Fund. An outline of the facts of this long-standing dispute between these two bodies and of the arguments on either side will be found at page 549 of the SUPPLEMENT to our issue for June 14th.

THE progress of practical medicine is to be dealt with in a series of lecture courses given in Berlin by the Lecturers' Association for Medical Vacation Courses from June 19th to 28th in collaboration with the Central Committee for Medical Post-graduate Education in Prussia. Lectures will be given on all special subjects of practical medicine. Among the subjects we note the new problems with which the practitioner is confronted, owing to the new Government insurance regulations. Foreign doctors are entitled to participate. All applications should be addressed to the Bureau of the Lecturers' Organization for Medical Vacation Courses (Herr H. Melzer, N. 24, Ziegelstr., 10/11). Inquiries will be answered by the Bureau of the Lecturers' Organization and by the Medical Information Bureau of the Kaiserin Friedrich-Haus (Berlin N.W. 6, Luisenplatz 2–4).

AN excellent method for promoting friendly relations between England and Germany has been adopted by the managers of the Crystal Palace, where the great Anglo-German Exhibition was opened by the Lord Mayor on June 11th. Every effort has been made to render the exhibition as fully representative as possible of the arts and industries of both countries, and the result is an extremely interesting collection of exhibits, whose tasteful arrangement and attractive surroundings show them off to the best advantage. Paintings and statuary offer a good opportunity for studying the different methods of English and German artists, whilst the sections devoted

to music, printing, wood carvings, and brass and metal work enable the visitor to compare still further the artistic capacities of the two nations. Other sections contain naval and military appliances, machinery, and tools; textiles, furniture, chemicals, and surgical and optical instruments; whilst some of the prettiest stalls are given over to German toys, trinkets, and pottery, including a number of very beautiful specimens of Dresden china. A large variety of international musical and athletic competitions will be held during the course of the summer in the great hall and grounds of the Palace; and a repertory theatre has been instituted in which German plays will be acted nightly by a special company. The exhibition will remain open until October, and should fulfil a useful purpose in making better known to each other and fostering a more complete sympathy between the people of England and Germany.

In 1877 the Staffordshire Institution for Nurses was established at Hartshill, near Stoke-on-Trent, mainly through the exertions of the late Bishop Sir Lovelace Stamer and Mr. W. D. Spanton, then surgeon to the North Staffordshire Infirmary. The institution has done a great deal of good work, and recently it was arranged to establish in connexion with it a nursing home for paying patients. This home was opened a short time ago, and Mr. Spanton presided at the ceremony. He said that the home was intended solely for those who were unable to pay an adequate fee. The building, he said, was very simply constructed, the great objects being to secure an abundance of air, free ventilation, and plenty of light. The building was then declared open by Lady Stamer, the widow of the late bishop. The home has, owing to the slope of the site, three stories on the one side and two on the other. In the front are the kitchen, scullery, and other rooms. On the ground floor there are two large wards and a smaller one, with a preparation room, waiting room, and accommodation for the superintendent. On the floor above there are two large wards, bath room, maids' room, and store rooms. The floors are connected by a lift as well as by a wide staircase. The building is lighted by electricity, the corridors are heated by hot water, and each room has an open fireplace in addition to an electric radiator. The success of the nursing institution has been so great that it now employs over a hundred nurses, and its affairs have been so well managed that Mr. Spanton was able to state that the new home had been built from reserve funds.

The annual report of the National Society for the Prevention of Cruelty to Children, presented to the Council on May 27th, states that the number of offenders against children in cases reported to the society in England, Ireland, and Wales in the year ending March 31st, 1913, was 74,687, being 899 more than in the previous year. The central fact of the whole report is that during the year the society acted as the protector of 159,407 children, a larger number than in any of the twenty-nine years of its existence, and 2,770 more than in 1911–12. The total number of complaints was 54,541, being 353 more than in 1911–12. The complaints are classified as follows: Neglect and starvation, 47,880; ill-treatment and assault, 3,886; indecent assault 194, criminal assault 163, immoral surroundings 485—making a total of 842 offences against morality; exposure for begging purposes, 575; exposure, 501; abandonment, 299; baby farming, 42; manslaughter, 1; other wrongs, 515. Of these 54,541 cases, 52,967, on a preliminary investigation, appeared to have substance in them; using the technical expression of the record, they were "found true." It is pointed out that this does not mean that the other 1,565 complaints made were not justified. "In the majority of these there was good reason for making them, but there was also an explanation that made it unnecessary for the investigator to proceed." Of the 54,541 complaints, 30,863 were made by members of the general public, 6,140 were reported by the police, 8,983 by school officials, 4,603 by other officials, while 3,952 were discovered by the society's inspectors. Stress is laid on the fact that prosecution is not the main object of the society's work. The cases brought to its notice during the year were dealt with as follows: Warned, 48,114; prosecuted, 2,456; otherwise dealt with, 2,397. The proportion of cases successfully dealt with by warning was larger than in any previous year, being 88.2 per cent. The report, though it bears witness to the splendid work done by the society, is sad reading, as showing the amount of suffering inflicted on helpless children. In view of the statistics set forth in the report there is comfort in the assurance, which is given with emphasis, that "neither cruelty nor neglect of children can be described as a characteristic of the people as a whole."

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Suggestions are invited by "C." as to the two following cases: (1) A boy who, although only 12 and of average height, weighs 8 st. 7 lb., and gets very readily tired. The urine shows phosphates and the blood an increased number of white corpuscles, but otherwise the boy appears healthy. Thymus extract is apparently of some utility. His stoutness began a few months after an operation for hypertrophied turbinates, adenoids, and tonsils. What is its pathogenesis? (2) A case of rheumatism in the shoulders. Ionization has not been tried, but all ordinary remedies for rheumatism, including hot ironing, have proved useless.

ANSWERS.

Somnambulism.

Dr. Alexander Haig (London, W.) writes in reply to "Aber," Journal, p. 1256: I would suggest that if he will measure the circulation by methods similar to those suggested in my paper, "Some Circulation Factors Admitting of Easy Measurement," Journal, September 16th, 1911, he will find considerable defects due in part to impure blood and in part to heart weakness. If he can improve the circulation, the somnambulism will also improve or disappear. He will find a good deal bearing on the relation of the circulation to the kindred troubles, headache and epilepsy, in my book, *Uric Acid in the Clinic*, London, 1910, p. 32 and pp. 72 to 76.

LETTERS, NOTES, ETC.

Enquirer, who has recently sent us two letters, is informed that answers cannot be returned unless the enquirer authenticates his communications with his name and address.

Premature Cremation.

Dr. G. Angus Hunt (London, N.) writes: With reference to the leader in the Journal for June 14th, may I ask—and, like Rosa Dartle, "I only ask for information"—if the doom of a premature burial is possible, why not the doom of a premature cremation? Personally, I should prefer even a momentary return to consciousness in a coffin underground rather than in a casket in the midst of a burning fiery furnace.

*** We think that even Miss Rosa Dartle's thirst for information would for once have been satisfied had she witnessed a cremation. Moreover, with the stringent precautions as to the certification of death when cremation is proposed, the doom of a premature cremation is almost unthinkable.

Dogs and Dog Owners.

Miss C. A. M. Bailey, Honorary Secretary National Canine Defence League, has issued an appeal to dog owners not to chain their dogs. We quite appreciate the fine sentiment which has dictated this appeal, but is it not just a little sweeping? An unchained dog may have a taste for the calf of the human leg, but we agree that dogs are often treated by their masters with great carelessness. As Miss Bailey says: "A dog chained out in the sun in hot weather, unable to reach the shade, his kennel, which has been left to face the sunny quarter, baked through and through, probably with no water to quench his burning thirst, or only a drop of stale, filthy, hot liquid, suffers torments." But while condemning this inhumanity, we think that her unreserved demand, "Give dogs their freedom and do not chain them," fails to take sufficiently into account possible danger to human beings.

Diachylon or Duty: A Correction.

In the sixth line of Dr. W. Wrangham's letter under this heading in last week's Journal (p. 1297), for "blood" read "lead."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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